ALLEN&HEATH

GLD

DIGITAL MIXING SYSTEM

Screen Reference Guide

For GLD firmware Version V1.2
Check the Allen & Heath web site for the latest version available

Also read the GLD User Guide AP8561

1. Contents

1. Contents....2
1. Power Up Screens....3
2. Home Screen....4
2.1 Home page....4
2.2 Users Login page....5
2.3 Quick Start page....5
3. Processing Screen....6
3.1 Name and Colour keypad....6
3.2 Overview page – Input Channel....6
3.3 Overview page – Mix Channel....7
3.4 Overview page – FX Send or Return....7
3.5 Channel Libraries....8
3.6 Preamp page....8
3.7 Preamp Option - Gain/Trim on Surface....9
3.8 Mix Ext In source....9
3.9 Noise Gate page....10
3.10 Insert page....10
3.11 PEQ page....10
3.12 GEQ page....11
3.13 Compressor page....13
3.14 Delay page....13
3.15 Routing Page – Input Channel view....14
3.16 Routing page – Mix Master view....15
3.17 Routing page – DCA Master....16
4. Meters Screen....17
4.1 Input Meters page....17
4.2 FX and Mix Meters pages....17
4.3 Custom 1-4 Meters pages....18
4.4 RTA....18
5. FX Screen....19
5.1 Front Panel view....19
5.2 Back Panel view....19
5.3 FX Libraries....20
5.4 FX Devices available....20
6. I/O Screen....28
6.1 dSNAKE I/O page....28
6.2 Surface I/O page....28
6.3 I/O Port In and I/O Port Out pages....29
6.4 Monitor Out page....29
6.5 MMO card in the I/O Port....30
7. Scenes Screen....31
7.1 Scene Manager page....31
7.2 Scene Recall Filter page....32
7.3 Cue List Editor page....33
7.4 Scene Safes page....34
8. Ganging Screen....35
9. Setup Screen – Audio....36
9.1 PAFL Setup page....36
9.2 Talkback Setup page....36
9.3 SigGen page....37
9.4 USB Audio page....38
9.5 Audio Sync Setup page....39
9.6 I/O Port Setup page....39
10. Setup Screen – Control....40
10.1 Strip Assign Setup page....40
10.2 Name & Colour Setup page....40
10.3 SoftKeys Setup page....41
10.4 Dimmer page....41
10.5 Surface Preferences Setup page....42
10.6 MIDI Setup page....42
11. Setup Screen – Memory....43
11.1 Show Manager page....43
11.2 Template Shows as a starting point....43
11.3 Library Manager page....44
12. Setup Screen – Config....45
12.1 Mixer Configuration Setup page....45
12.2 Network Setup page....46
12.3 User Profiles Setup page....46
13. Setup Screen – Utility....48
13.1 Diagnostics page....48
13.2 Date/Time Setup page....48
13.3 Calibration Setup page....48
13.4 Firmware Setup page....49
14. Resetting the GLD....50

This guide presents information on the touch screen pages available within the GLD mixer. It is an off-line version of the touch screen Help File available within the GLD.

For more information on using the GLD system please refer to GLD User Guide AP8561

GLD Touch Screen Reference V1.2

Issue 1

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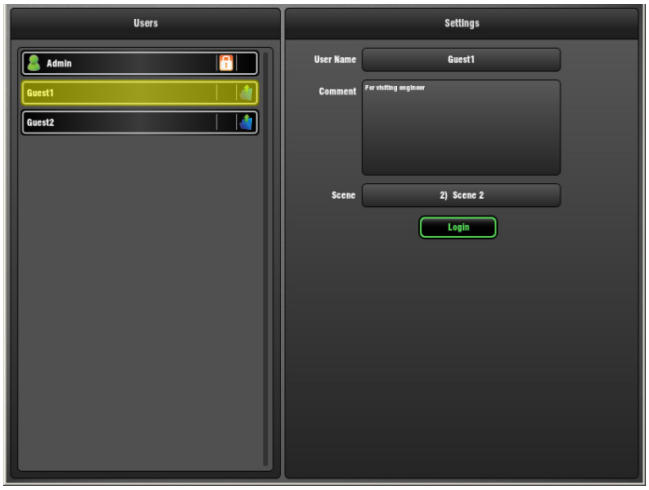
1. Power Up Screens

The **Home** screen will appear on power up If no password is set.

The **Login** screen will appear when you:

- Power up when the current User has a password set
- Unlock the surface when a password is set
- Change user from the **Home** screen



Users List

The list shows available Users. The Admin User is always displayed. Up to 9 other Users that have been made 'Active' by Admin will also display in the list. Icons show if the User has a password or User Scene set.

Password – If one is set it needs to be entered using the screen keypad when the user logs in.

User Scene – If a User Scene is set it is recalled automatically on login when the user is changed. It does not recall when the same user logs in, or when the system is powered up again while the same user is current.

A User Scene can be set by Admin to ensure a pre-determined layout and starting point loads when a different user logs in.

Permissions – Access to selected functions and parameters can be restricted for each User. This is configured by Admin using the **Setup** screen.

Not Shut Down Correctly reminder screen

If the GLD was last switched off without it being first shut down using the **Home** screen Power Down button this screen will appear on power up. The GLD will continue to boot after a 10 second count down. Choose to start immediately using the Start GLD button, or go to the Advanced page if you wish to fully reset the system.

2. Home Screen

2.1 Home page

This is the main Home screen. It displays after power up. It also displays when the screen Processing key is active and the active Sel key is turned off.

To return to the Home screen at any time:

- Turn off the active Sel key while in a **Processing** screen, or
- Press the **Processing key** next to the touch screen once if no Sel key is active, or twice a Sel key is active.

Page tabs – Touch a tab at the top of any screen to open its associated page.

GLD information – The centre section of the Home page displays Firmware version, current User logged in, and last Scene and Show recalled.

System Status - Displays a list of connected AudioRacks. A green tick indicates system good. If a blue circle appears touch the box to open a window for information about the event logged, for example a QOS (cable) error. Touch the box again to close the window.

Custom Meters 1-4 – These screens can be assigned by the user with a selection of up to 16 meters. They can be blank if no meters have been assigned.

RTA – The 31-band 1/3 octave Real Time Analyser can be displayed. Its source is the current PAFL monitor selection.

Note The RTA can also be viewed on the mix GEQ page and on the fader strip meters while in GEQ Fader Flip mode.

Clock - Shows the time in hours, minutes, seconds. Set this using the **Setup** / **Utility** / **Date/Time** screen.

To safely Power Down the GLD system - Touch the Power Down button, confirm, and then switch power off. Failure to power down correctly may result in parameter changes made up to 30 seconds before power is removed becoming lost.

Lock Surface - Touch the Lock Surface button and Yes in the confirmation popup to lock the surface controls. Parameters will not be changed if the surface controls are moved while locked, for example when left unattended. Touch the screen again to unlock the surface and return the controls to their previous setting.

Note If a password is set for the current user then this must be entered when the user locks or unlocks the surface.

Help Manual – GLD has a built-in Help manual. Touch the **?** in the status bar to open the Help for the current page.

Current status display:

Active Processing – Displays the Name and Colour for the channel currently selected using a fader strip Sel key is displayed at the top left of the screen.

Active Mix – Displays the Name and Colour for the Mix currently selected using a fader strip Mix key is displayed at the bottom left of the screen. When the Main (LR) mix is active the status bar simply displays “Main”.

Note Be aware of which mix is currently active while you are mixing. It is good practice to turn off the Mix key to return to the main mix once you have finished adjusting a mix, for example an Aux or FX send.

Current and Next Scene – The last Scene recalled and the Scene highlighted in the list ready to be recalled are displayed in the status bar. When the Scene is recalled its name briefly flashes green to confirm the action.

USB playback/record status – An icon at the bottom right of the screen lights blue while playing back and red while recording. Touch the icon to open the **USB Audio** page.

Yellow triangle error indicator – Touch the yellow triangle to view the Event Log.

2.2 Users Login page

Open this page to log in as a different User.

The system Administrator can set up to 9 User Profiles to protect settings and reduce operator error by restricting access to certain functions for different users.

The list shows available Users. These can be configured in the **Setup** / **Config** / **User Profiles** screen. The Admin User is always displayed. Only other Users that have been made 'Active' by Admin will display in the Users page. The list displays if the User has a password or User Scene set.

Password – If one is set it needs to be entered using the screen keypad when:

- The User logs in using this screen
- The GLD is powered up
- The User locks or unlocks the surface

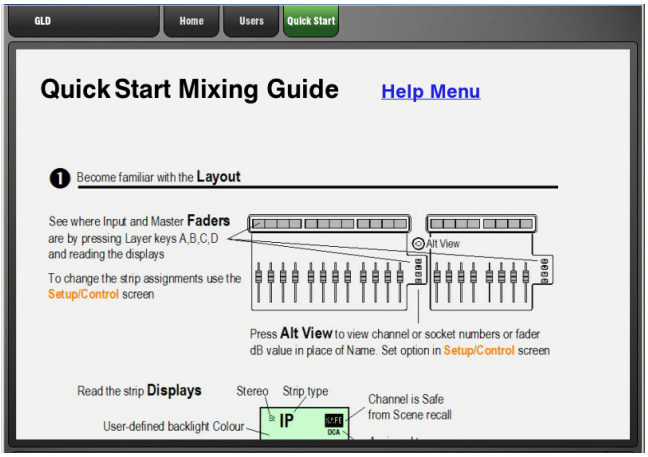
User Scene – The folder icon in the list shows if a User Scene is set. The window on the right displays which Scene is set for the User highlighted in the list.

Note The User Scene, if one is set, is recalled automatically on login when the User is changed. It does not recall when the same User logs in, or when the system is powered down and up again while the same user is current.

Permissions – Access to selected functions and parameters can be restricted for each User. These are configured by Admin.

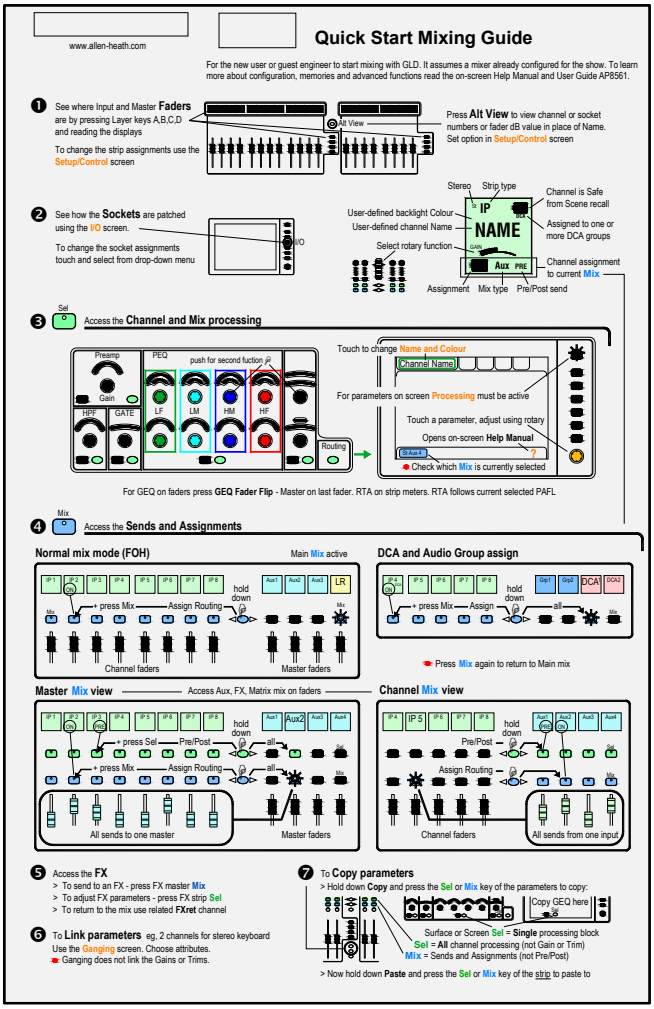
2.3 Quick Start page

Opens a Quick Start sheet to help the new user or guest engineer learn in just a few minutes how to mix their show using GLD.


GLD
Home
Users
Quick Start
Quick Start Mixing Guide
Help Menu
Become familiar with the Layout
See where Input and Master Faders are by pressing Layer keys A,B,C,D and reading the displays
To change the strip assignments use the Setup/Control screen
Alt View
Press Alt View to view channel or socket numbers or fader dB value in place of Name. Set option in Setup/Control screen
Read the strip Displays
Stereo
Strip type
IP
User-defined backlight Colour
Channel is Safe from Scene recall

Swipe up and down the screen to scroll through the page.

Touch Help Menu to open the list of additional Help topics.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Quick Start Mixing Guide
For the new user or guest engineer to start mixing with GLD. It assumes a mixer already configured for the show. To learn more about configuration, memories and advanced functions read the on-screen Help Manual and User Guide AP8561.
See where Input and Master Faders are by pressing Layer keys A,B,C,D and reading the displays
To change the strip assignments use the Setup/Control screen
Alt View
Press Alt View to view channel or socket numbers or fader dB value in place of Name. Set option in Setup/Control screen
See how the Sockets are patched using the I/O screen.
To change the socket assignments touch and select from drop-down menu
Stereo
Strip type
User-defined backlight Colour
User-defined channel Name
Select rotary function
Assignment
Mix type
Pre/Post send
Channel is Safe from Scene recall
Assigned to one or more DCA groups
Channel assignment to current Mix
Access the Channel and Mix processing
Preamp
PEQ
push for second function
Gain
HPF
GATE
LF
LM
HM
HF
Routing
Touch to change Name and Colour
Channel Name
For parameters on screen Processing must be active
Touch a parameter, adjust using rotary
Opens on-screen Help Manual
Check which Mix is currently selected
For GEQ on faders press GEQ Fader Flip - Master on last fader. RTA on strip meters. RTA follows current selected PAFL
Access the Sends and Assignments
Normal mix mode (FOH)
Main Mix active
hold down
+ press Mix
Assign Routing
Channel faders
Master faders
DCA and Audio Group assign
Press Mix again to return to Main mix
Master Mix view
Access Aux, FX, Matrix mix on faders
Channel Mix view
+ press Sel
Pre/Post
All sends to one master
All sends from one input
Access the FX
> To send to an FX - press FX master Mix
> To adjust FX parameters - press FX strip Sel
> To return to the mix use related FXret channel
To Link parameters eg, 2 channels for stereo keyboard
Use the Ganging screen. Choose attributes.
Ganging does not link the Gains or Trims.
To Copy parameters
> Hold down Copy and press the Sel or Mix key of the parameters to copy:
Copy GEQ here
Surface or Screen Sel = Single processing block
Sel = All channel processing (not Gain or Trim)
Mix = Sends and Assignments (not Pre/Post)
> Now hold down Paste and press the Sel or Mix key of the strip to paste to

3. Processing Screen

3.1 Name and Colour keypad

Input channels, FX sends and returns, Mix masters and DCA masters can each be given a Name and Colour using the on-screen touch keypad. These display in the fader bank LCD 'virtual write-on strip' and also on the screen wherever the channel name is shown.

To open the on-board naming keypad touch the keyboard icon at the top left of the screen while in the **Processing screen** with a fader strip Sel key active.

Colour – Touch a colour box to instantly apply that colour to the channel. 7 colours and off are available.

Name – Type in a name using the keypad. Use Caps and Shift to access uppercase and special characters. Touch Apply to accept the change or Close to shut the keypad without accepting the change.

A name can have up to 8 characters.

Note 5 characters are displayed on the fader strip LCD.

Quick Names – Up to 15 names can be entered and stored for instant access.

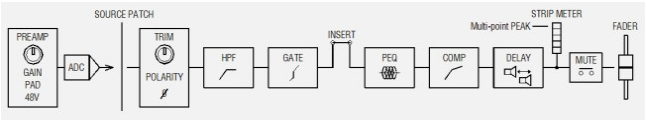
- To store, type in a name, touch a Quick Name box and touch Store.
- To recall, touch a Quick Name box and touch Apply.

Quick Names are stored in Show memories.

3.2 Overview page – Input Channel

Input Channel processing pages are accessed by pressing an Input strip Sel key while the **Processing** screen is selected. The Input Overview page provides a thumbnail view of all processing for the selected input channel.

The signal flow for the Input Channel is:



Touch a tab at the top of the screen or touch a section to open the related processing or routing window. EQ and dynamics curves display yellow when switched In and grey when switched Out.

The top left block shows Preamp and HPF. Icons show 48V phantom power and Pol- polarity setting. The source currently patched to the channel is also shown.

The Gate is available on input channels only.

Insert – Assignment and bypass status are shown.

Delay – Shows the setting for the selected input. For a view of all Input Channel delays open the Delay page.

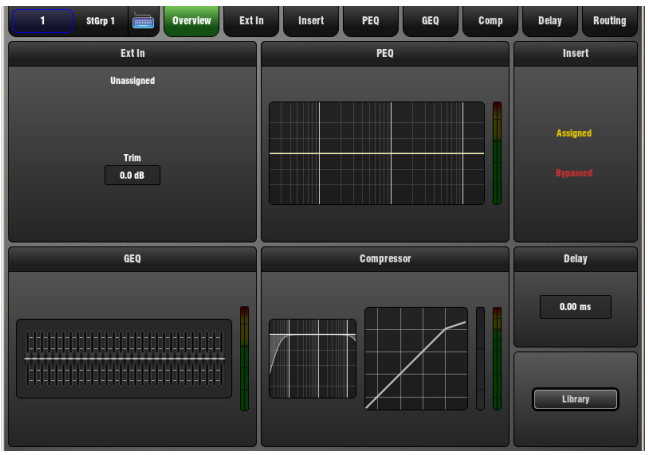
Library – The Input Channel Library is accessed from the Overview page.

Sel key and button PFL listen function

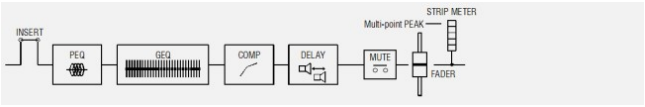
Press and hold any processing Sel key or screen Sel button to listen to (PFL) the signal at that point in the channel signal path. This interrupts the current PAFL selection in the headphones and listen wedge/IEM monitor. The option can be turned on or off using the 'Disable PFL on Sel' button in the **Setup** / **Audio** / **PAFL** screen.

3.3 Overview page – Mix Channel

Mix processing pages are accessed by pressing a mix master strip Sel key while the **Processing** screen is selected. The Mix Overview page provides a thumbnail view of all processing for the selected mix channel.



The signal flow for the Mix Channel is:



Touch a tab at the top of the screen or touch a section to open the related processing or routing window. EQ and dynamics curves display yellow when switched In and grey when switched Out.

The top left block shows if a Preamp or other source has been assigned as the External Input to the mix. Default is none assigned. Trim affects the external input only.

The GEQ is available on mix channels only.

Insert – Assignment and bypass status are shown.

Delay – Shows the setting for the selected mix. For a view of all Mix Channel delays open the Delay page.

Library – The Mix Channel Library is accessed from the Overview page.

3.4 Overview page – FX Send or Return

FX processing pages are accessed by pressing an FX Send or Return strip Sel key while the **Processing** screen is selected. The page provides a thumbnail view of all processing and parameters for the selected FX.

Touch the FX parameter controls and use the screen Rotary to adjust values. Touch a tab at the top of the screen to open the PEQ or routing window. The 4-band PEQ is available within the FX Return strip.

Touch to highlight the FX preset name and use the Rotary to scroll through the available presets for the FX unit loaded. The FX is changed as you scroll through the list.

Library – The FX Library can be accessed from the FX Send or Return screen. You can use this to load different types of FX unit into the slot.

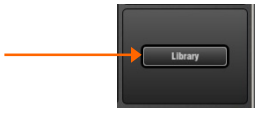
To access the FX patching and for a view of all 8 RackFX units and their send/return or insert routing go to the **FX** screen.

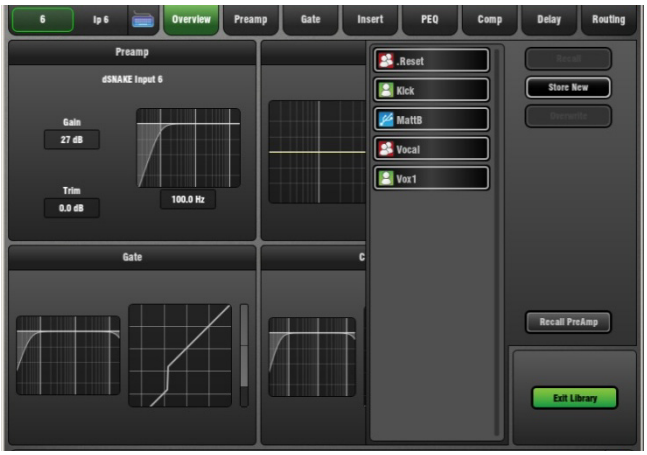
3.5 Channel Libraries

Libraries let you store and recall presets for individual processing blocks such as EQ and Compressor, and also for the whole Input or Mix channel.

Input and Mix channel processing Libraries do not store routing, levels or assignments.

The Library window lists available presets. Input and mix channel Libraries are accessed from their Overview page. Touch the Library button to open the Library window. Touch Exit Library to close the window.





The list shows 3 types of Library:

- Factory (cannot be deleted)
- User (stored in memory in the GLD)
- USB (accessed directly from the USB key)

Touch to select a Library item and use the buttons to Recall or Overwrite the item. Touch Store New to store a new User Library item. Use the name keypad to apply a name of up to 8 characters.

User and USB Libraries cannot be deleted from this page. Go to the **Setup / Memory / Library Manager** page to delete and rename Libraries or transfer them between the GLD and a USB key.

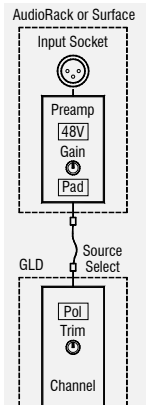
Input Library Preamp recall – Input Libraries store the Preamp settings and all channel processing including HPF, Gate, PEQ, Compressor and Delay. The Recall Preamp button gives you the option to include or exclude Preamp settings when recalling the Library.

The Recall Preamp button setting is remembered when changing channels.

3.6 Preamp page

The Preamp page provides access to the Input Channel source patching, socket Preamp settings, and channel Trim and HPF.

Touch a control box to highlight a parameter then turn the screen Rotary to adjust its value.



Socket Source – Open the drop-down menu to choose which source to patch to the channel. Touch Apply to accept or Cancel to leave unchanged.

Sources that can be patched:

- An AudioRack input (via dSNAKE)
- A GLD rear panel input
- The USB stereo playback
- One of the built-in effects (Rack FX)
- The Signal Generator (as a test source)

To provide a simple starting point the Template Show default is one-to-one mapping between input sockets and channels. For example, Socket 1 to Channel 1, Socket 2 to Channel 2 and so on.

Socket Preamp – If the patched source is a Mic/Line XLR input then its Preamp controls are shown. These provide remote control of the input preamp circuit located at the socket.

Gain – Touch to highlight the Gain value box. Turn the screen Rotary to adjust.

Phantom power - Touch and hold the 48V button for 1 second. This is to prevent accidental operation.

Pad switches in a 20dB input attenuator. The combined Gain+Pad value is shown in the Gain box.

Preamp Safe – Touch this button to make Preamp Gain Pad and 48V settings safe from Scene recall. This can be useful when splitting the same mic preamp to two or more channels.

Note Making a channel Safe using the surface Safe key automatically makes the associated Preamp safe. Turning off Safe using the surface key unsafes the Preamp.

Trim can provide +/-24dB 'gain' control when the source does not have a preamp, for example input from GLD surface RCA line inputs, the I/O Port or USB playback. Trim is part of the channel, not the preamp.

When working with mic preamps it is typical to leave Trim set to 0dB unless you are gain sharing and want to adjust local level independent of preamp Gain.

Polarity toggles normal and reverse (+/- balanced input pins swapped). Use to compensate for reverse wired cables, or when double miking sources such as a snare drum with 'top' and 'bottom' mics, or kick drum with 'in' and 'out' mics. Polarity is part of the channel, not the preamp.

HPF – The High Pass Filter cuts low frequencies, for example to reduce pops or wind noise on microphones or tune out unwanted low end on acoustic instruments.

The HPF provides a 12dB/octave slope with cut-off frequency adjustable from 20Hz to 2kHz. The filter can be switched in or out of circuit. A good starting point for vocal mics is to switch the HPF in and set to around 120Hz.

The HPF can also be viewed and adjusted in the PEQ page.

Screen Sel buttons – These do the same as their related surface Processing Strip Sel keys:

- Use with the Copy/Paste/Reset keys
- Hold to listen to (PFL) the signal at that point if the 'Disable PFL on Sel' option is set to Off in the **Setup** / **Audio** / **PAFL** screen.

3.7 Preamp Option - Gain/Trim on Surface

The Preamp Option lets you choose whether the Processing Strip Gain rotary controls the Preamp Gain or channel Trim.

Preamp on Surface – The surface Preamp rotary adjusts Preamp Gain. This is the default for normal single console operation.

Trim on Surface – The surface Preamp rotary adjusts Channel Trim. Consider using this in situations where you are sharing the same Preamp between channels or FOH and Monitor consoles.

OPTIONS pull-up window

Provides a global setting for Preamp or Trim on Surface. This affects all input channels.

Touch the pull-up tab and swipe your finger upwards to open its window.

A note about Gain Sharing

Any Preamp can be patched to any Channel. The same Preamp can be patched to more than one channel. For example:

- One set of channels within the GLD allocated to the FOH mix and another split from the same mic inputs for important channels feeding the monitor mixes.
- Mic preamps split between dedicated FOH and Monitor consoles using a digital snake connected to the GLD I/O Port.

In the above cases the Preamp is shared by two channels. The 'Master' console has control of the preamps and mic Gain. The 'Slave' console gets its inputs from the digital split. Its surface Preamp rotary becomes Channel Trim as it does not have mic preamps. However, it will be affected by preamp Gain changes made at the Master.

It is of course best that the FOH and Monitor engineer each have independent control of channel gain.

A solution is to set the Preamp Gain during sound check and for both engineers to use the Trim rather than Gain controls during the show. This means setting the 'Trim on Surface' option on the 'Master' console.

3.8 Mix Ext In source

You can assign a source as an external input to the mix, for example for bus summing, combining console outputs, or an external communications or test source.

The Ext Input sums with the GLD mix pre-insert and is affected by the master processing and fader.

Source Select – Open the drop-down menu to choose which source to patch to the mix output. Touch Apply to accept or Cancel to leave unchanged.

Trim - Provides +/-24dB level control. This only affects the Ext Input. Start with Trim set to 0dB.

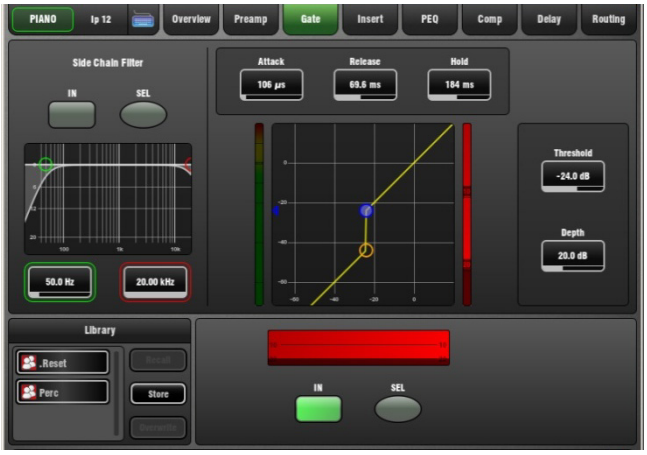
Polarity - Toggles normal and reverse (+/- balanced input pins swapped). This only affects the Ext Input to the mix, not the mix.

Socket Preamp – If the patched source is a Mic/Line XLR input then its Preamp controls are shown. These provide remote control of the input preamp circuit located at the socket.

3.9 Noise Gate page

The Noise Gate automatically attenuates the signal when it drops below its threshold level. For example to:

- Reduce excessive ring on a kick or tom drum
- Reduce hiss on a noisy keyboard when not played.



Touch and drag the curve or touch a parameter box. It highlights orange to show its value can be adjusted using the screen Rotary.

Depth - Sets how much the signal is attenuated when the gate closes. A good starting point is around 30dB. Reduce for less attenuation. If Depth is set to 0dB the gate will not attenuate the signal.

Threshold - Sets the level at which the gate opens to let the signal be heard. The meter on the left lines up with the graph and shows the signal at the input to the gate. The gain reduction meter on the right shows when the gate is closed. The histogram below shows gate activity over time.

Attack, Hold, Release - These controls set how fast the gate opens when the signal rises above the threshold, how long it is held open after the signal falls below the threshold and how long it takes to attenuate after it closes.

Side Chain Filter - Sets the frequency range of the signal that triggers the gate. Use this to prevent false triggering of the gate by filtering out low or high frequencies outside the fundamental range of the instrument being gated. For example, the low frequencies of a kick drum causing the gate on a rack tom to open.

In - Switch the gate in or out of circuit. The side chain can also be switched in or out of the gate. The curve turns yellow and the gain reduction meter displays red when the gate is switched in.

Library - You can store and name the current gate settings as a preset in the Library. Existing presets can be overwritten with the current settings. User Libraries can be exported and imported via USB key. To do this go to the **Setup** / **Memory** / **Library Manager** screen.

Sel buttons – Touch while holding the Copy, Paste or Reset key to copy the gate settings to other channels or to reset them to default.

3.10 Insert page

You can insert external equipment or one of the 8 internal FX units into a channel or mix signal path:

- An external signal processor using physical sockets
- One of the 8 internal Rack FX
- Computer plug-ins via the I/O Port
- Networked audio via the I/O Port

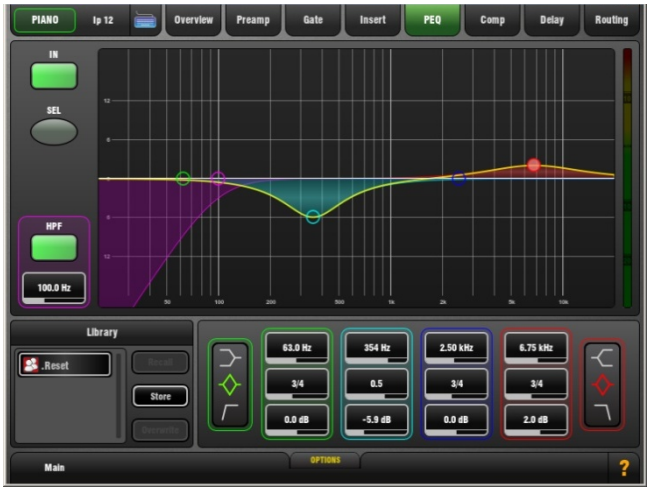
Use the drop-down menus to assign the Insert **Send** and **Return** to physical sockets, the I/O Port or an FX unit. Touch Apply.

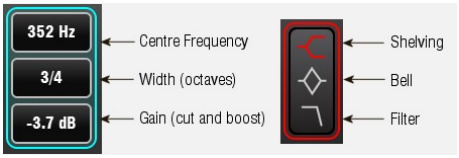
In button – Becomes available once the insert is assigned. Switch the inserted device in or out of circuit.

+4dBu/-10dBV – Choose the operating level of the insert point. +4dBu (default) is the typical setting for professional audio equipment. -10dBV (-8dBu) is a standard for lower level consumer equipment.

3.11 PEQ page

The Parametric Equaliser (PEQ) provides 4 fully adjustable bands of equalisation allowing very precise tone control. It can be adjusted using dedicated rotary controls on the surface or using the touch screen. For screen control, touch and drag the curve or touch a parameter box and use the Rotary.





In - Switch the PEQ in or out of circuit. The curve turns yellow when switched in and grey when switched out.

Type - The LF and HF EQ bands may be set as shelving, bell shaped or low/high cut filter response. When set as a filter the response is 12dB/octave.

Frequency - Sweeps the shelving, centre or cut-off frequency depending on the type of the EQ band.

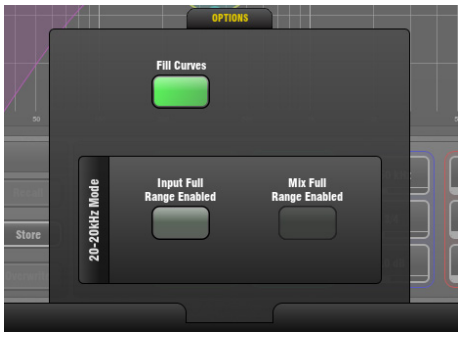
Width - Adjusts the width of the bell shaped EQ band. Push and turn the Frequency rotary or use the screen. The value is shown in octaves. Higher values up to 1.4 affect a wider range of frequencies. Lower values down to 1/9th affect a narrower range. A value of 1/3 has a similar affect to the Graphic EQ.

Gain - Allows up to +/-15dB boost or cut for each EQ band. 0dB represents a flat response. It is typical to cut rather than boost when live mixing.

HPF - The High Pass Filter attenuates low frequencies below its cut-off frequency with a slope of 12dB/octave. Switch in or out using the In button. The HPF can also be adjusted using the Preamp page.

Library - You can store and name the current PEQ settings as a preset in the Library.

OPTIONS pull-up window



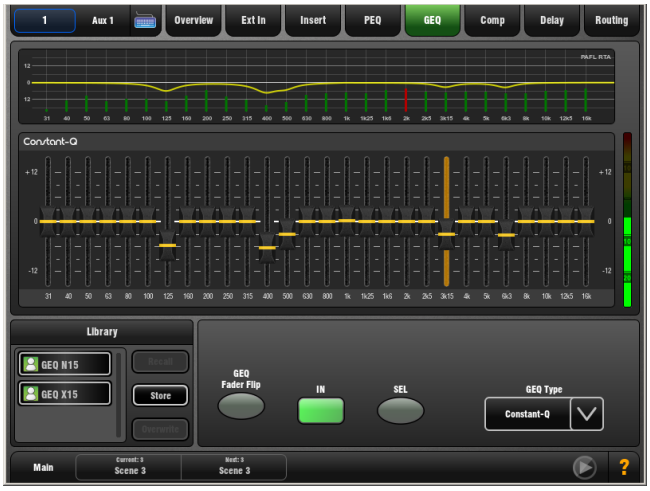
The frequency range for the 4 bands may be set globally for all inputs or mixes to be limited or full **20Hz to 20kHz.**

A **Fill Curves option** to show the overall or individual effect of the EQ bands is available.

Sel button - Touch while holding the Copy, Paste or Reset key to copy the PEQ settings to other channels or to reset it flat.

3.12 GEQ page

A 28-band 1/3 octave Graphic Equaliser is provided on each of the 20 mix outputs. It can be adjusted using the touch screen or the surface faders.



Frequency response curve – The top part of the screen shows the combined response of the slider settings. This can show the response differences between the four GEQ types available.

RTA display – The Real Time Analyser display is superimposed on top of the frequency response curve. The RTA displays metering of the currently selected PAFL signal split into its 1/3rd octave frequency bands. The meter bars are shown in green. A red bar and a dot at the top indicate the dominant frequency band if the Show Peak Band option has been set in the **Meters** / **RTA** screen **Options** pull-up window.

Note The RTA follows the current PAFL selection. Make sure you have selected the PAFL key for the channel or mix you wish to analyse, for example the related Aux mix when you are using the GEQ and RTA to ring out a stage monitor.

Using the screen to control the GEQ

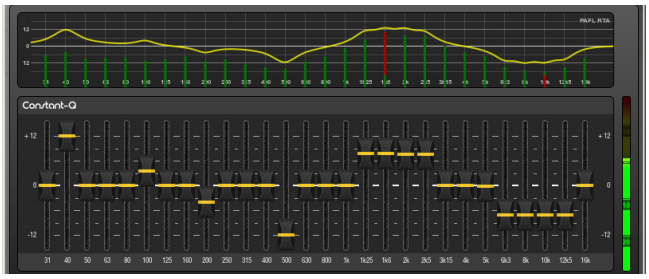
Touch a frequency slider to highlight it. Drag the slider with your finger or use the screen Rotary to adjust cut or boost for the highlighted frequency band.

In - Switch the GEQ in or out of circuit. The settings turn yellow when switched in and grey when switched out.

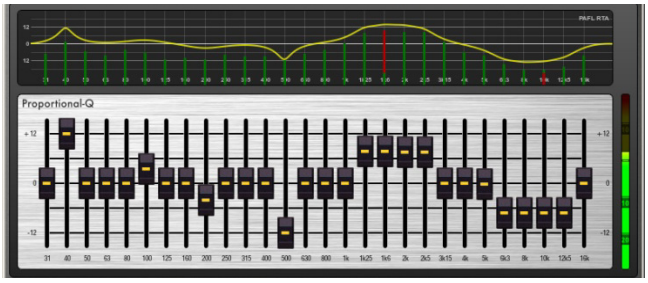
Sel button – Touch while holding the Copy, Paste or Reset key to copy the GEQ settings to other mixes or to reset all bands flat.

GEQ Type – Use the drop-down menu to select one of four GEQ types available. These offer different types of cut/boost response:

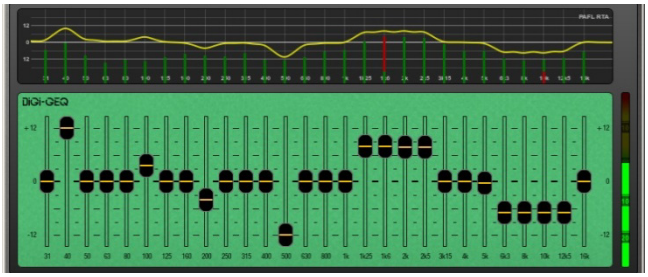
Constant-Q - Symmetrical cut/boost where the width (Q) of the filter is a constant 1/3rd octave for any amount of cut or boost.



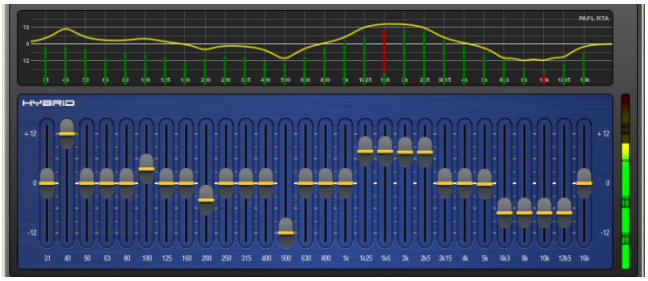
Proportional-Q - Provides smooth wide Q for low cut/boost, which progressively tightens beyond 1/3rd octave for max boost/cut.



Digi-Q - Gain and width are optimised to minimise band interaction and to provide a frequency response as close to the slider positions as possible.



Hybrid - Allen & Heath have developed the best of both worlds. The boost is proportional-Q for smooth and warm small boost settings. The cut is Constant-Q providing clinical 1/3rd Octave attenuation with minimal band interaction.



Using the faders to control the GEQ

You can quickly access the GEQ on the faders for the mix with its Sel key active by:

- Touching the screen GEQ Fader Flip button, or
- Pressing the GEQ Fader Flip key to the right of the faders while in any of the mix Processing pages.

This puts the lower frequency half of the GEQ on to the faders. Press again to present the higher frequency half, and press again to return to normal fader mode.

The frequency values are shown in the strip LCD display which turns red while in Fader Flip mode.

In Fader Flip mode the extreme right hand strip becomes the **Master** for the mix currently selected. The fader is either the mix master or a channel send to that mix if a channel Mix key is active. This lets you ring out a monitor mix by adjusting the GEQ while raising the channel send rather than master using this fader.

Press the fader strip Sel keys to reset individual frequency bands flat. The green Sel indicator lights when the band is flat.

Selecting the **mix PAFL key** and using the **RTA Show Peak Band** option will let you see the RTA on the strip meters and help you identify frequencies that start to ring.

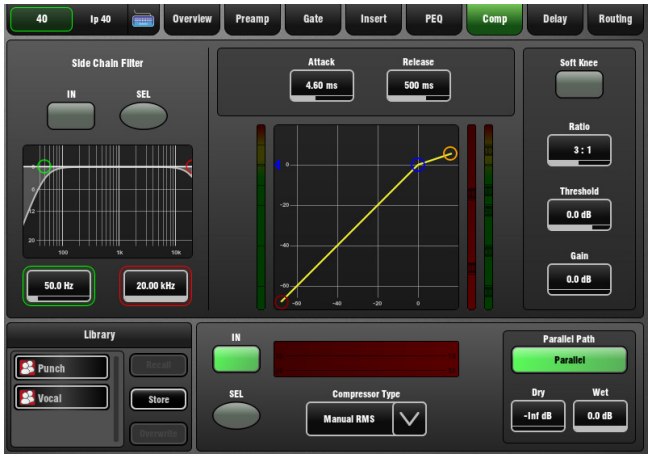
Library - You can store and name the current GEQ settings as a preset in the Library. Existing presets can be overwritten with the current settings. User Libraries can be exported and imported via USB key. To do this go to the **Setup** / **Memory** / **Library Manager** screen.

Note The GEQ Type is stored as part of the GEQ Library.

3.13 Compressor page

The Compressor is used to automatically reduce the dynamic range of the signal by squashing loud sounds and bringing up quieter sounds. For example, to smooth the level of a b ass guitar or the dynamics of a vocal.

Touch and drag the curve or touch a parameter box.



Ratio - Sets the amount of compression when the signal exceeds the threshold. A ratio of 1:1 means no compression. A good starting point for vocals is around 3:1. This means a 3dB rise in level at the input of the compressor would result in a 1dB rise at its output. To use the compressor as a **limiter** set the ratio to 'Infinity'.

Threshold - Sets the level at which the compression starts. The meter on the left lines up with the graph and shows the signal at the input to the compressor. Start with a high setting and then dial it back until compression starts. The gain reduction meter on the right shows how much the signal is being compressed. The histogram below shows compressor activity over time.

Gain - This is 'make-up' gain which boosts the output to compensate for the drop in overall volume when the signal is being compressed. Adjust so that you hear a similar volume when switching the compressor in or out with normal signal present. Set Gain to a higher value for higher settings of Ratio and lower settings of Threshold. It is this gain that makes quiet signals sound louder.

Note If you notice the channel strip meter Pk light flashing while the meter reads low then check that you are not overdriving the Preamp while the signal is being heavily compressed. In this case back off the Preamp Gain and turn up the compressor Gain.

Soft Knee - Determines how quickly the compression cuts in. The Soft Knee adds compression gradually with more gentle ratio as it approaches the threshold level. Use this for more subtle compression of signals that hover around the threshold level.

Attack and Release - These controls set how fast the compressor pulls back the signal when it exceeds the threshold and how long it takes to let go when the signal drops below the threshold. Set this according to the type of signal to avoid hearing a 'pumping' effect.

Side Chain Filter - Restricts the frequency range of the signal that triggers the compression. Use this to filter out low or high frequencies outside the range of the wanted signal thus preventing false triggering. Extreme settings can be used for special effect or frequency sensitive compression, for example 'de-essing' to compress just a range of high frequencies to reduce sibilance of a vocal. The default is the filter switched out.

Compressor Type - Select one of the Manual or Auto compressor emulations. Auto modes automatically adjust the attack and release according to the dynamics of the signal. In some cases this can be better for avoiding 'pumping' effects. Types available:

- Manual Peak
- Manual RMS
- Auto Slow Opto
- Auto Punchbag

Parallel Path - Lets you mix the dry path ‘uncompressed’ signal with the compressed output. This 1970’s studio technique also known as 'New York compression' is useful in live audio. By mixing the raw signal with heavily compressed material (with make-up gain) low level detail is amplified while the high level transients are preserved from the raw signal.

With Parallel Path turned off only the compressed signal is routed to the output. This is the default setting. With Parallel Path turned on, the mix between ‘dry’ uncompressed and ‘wet’ compressed signal can be balanced using the independent controls.

Library - You can store and name the current GEQ settings as a preset in the Library.

Sel buttons - Touch while holding the Copy, Paste or Reset key to copy Compressor settings to other channels or to reset it to factory default.

3.14 Delay page

The delay settings for all the channels or mixes are shown on this screen page. Compare settings between channels.

The currently selected channel is highlighted. Use the screen Rotary to change its value. Touch another parameter box to adjust the delay for a different channel.

Delay Bypass - Touch the button to toggle the delay in or out. Use this to compare the direct and delayed signal, for example when you are time aligning delay fill speakers.

Input Delay

Input delay can be used to time align instruments to each other or create extra 'depth' on stage.

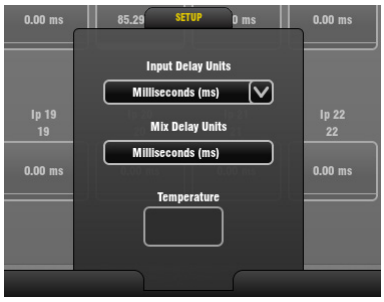
- Milliseconds 0 to 85 ms
- Metres 0 to 29 m
- Feet 0 to 96 ft
- Samples 0 to 4094 s

Mix Delay

Mix delay is typically used to time align delay fill speakers to the main PA, or to align the main PA to the back line such as drum kit in a smaller venue where the acoustic sound coming from the stage is significant. Range:

- Milliseconds 0 to 170 ms
- Metres 0 to 58 m
- Feet 0 to 190 ft
- Samples 0 to 8100 s

SETUP pull-up window



The default delay unit is time in 'ms' (milliseconds) but can be changed to distance in 'metres', 'feet', or to 'samples. This can be changed globally for the Input channels and for the Mix channels. GLD compensates for the effect of temperature on delay. Enter the ambient temperature if distance is chosen.

3.15 Routing Page – Input Channel view

The Input Routing page lets you view and adjust the channel sends, routing, assignments and Direct Out.

There are two ways to work with channel Routing:

Using the touch screen – Press a channel Sel key. Touch the screen Routing tab or press the Processing Strip Routing key to open the Routing page for the currently selected Input Channel.

Touch the tabs within the page to access the assignments and send levels from the selected Input Channel to all Groups, Auxes and FX, its DCA assignments, and adjust its Direct Output level.

Touch a box to toggle single parameters such as DCA and Group assignments. Touch a box to open the send panel on the right of the screen to adjust multiple parameters such as Aux send levels, assignments and Pre/Post settings. The screen Rotary becomes the Aux send level control as soon as the box is touched.

Using the GLD fader strips - Press an Input strip Mix key. Current settings are shown in the master strip LCD displays for:

- Sends from the channel to all Auxes
- Sends from the channel to all FX
- Channel assignments to the audio Groups

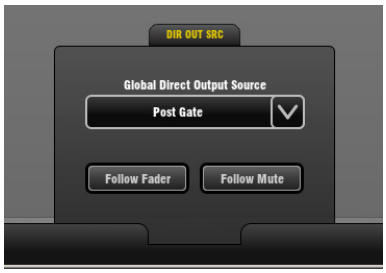
While holding down the Assign key press master Mix keys to toggle assignments on or off. While holding down the Pre/Post key press Sel keys to toggle Aux sends pre or post fader. Aux send levels can be adjusted using their master faders while in Mix mode. Remember to press the strip Mix key again to return to the main mix.

Aux sends – The send to each Aux can be set Pre or Post fader from the channel. The point within the channel signal path that feeds the send is set globally for each Aux using its master Routing page.

For stereo Auxes a Pan control appears. This adjusts the stereo image of the channel to the Aux and is not the same as or affected by the main channel Pan control.

Direct Output – Open the Direct Out tab to access its level. Normal setting is 0dB.

DIR OUT SRC pull-up window



The global source for the input channel Direct Outputs can be set here using the drop-down menu. This setting affects all channel Direct Outputs:

- Post-Preamp
- Post- HPF
- Post-Gate
- Post Insert Return
- Post-PEQ
- Post-Comp
- Post-Delay

Touch the buttons to set:

- Follow Fader (pre/post fader)
- Follow Mute (pre/post mute)

Strip Rotary control Custom 1 and 2 views - These can be configured as dedicated Aux or FX sends or Direct Out level using the **Setup** / **Control** / **Surface Prefs** screen.

3.16 Routing page – Mix Master view

The Mix Routing page lets you view and adjust all sends and routing from the channels.

There are two ways to work with master Routing:

Using the touch screen – Press a mix master Sel key. Touch the screen Routing tab or press the Processing Strip Routing key to open the Routing page for the currently selected Mix master.

Touch the tabs within the page to access the assignments and send levels from all Inputs, FX Returns and Groups to the mix and its DCA assignments.

Touch a box to toggle single parameters such as DCA and Group assignments. Touch a box to open the send panel on the right of the screen to adjust multiple parameters such as Aux send levels, assignments and Pre/Post fader settings. The screen Rotary becomes the Aux send level control.

Using the GLD fader strips - Press a master strip Mix key. Current settings are shown in the channel strip LCD displays. For example, with an Aux master selected:

- Sends from all channels to the mix
- Sends from all FX returns to the mix
- Sends from all audio Groups to the mix

While holding down the Assign key press channel Mix keys to toggle assignments on or off. While holding down the Pre/Post key press Sel keys to toggle Aux sends pre or post fader. Aux send levels can be adjusted using the channel faders while in Mix mode. Remember to press the strip Mix key again to return to the main mix.

To set all channels On or Pre/Post fader hold the Assign or Pre/Post key and press the mix Master Mix or Sel key.

Aux send channel source – Use the drop-down menu at the top right of the screen to set the point within the channel signal path that feeds the Aux sends. This is set globally for each mix:

- Post-Preamp
- Post- HPF
- Post-Gate
- Post Insert Return
- Post-PEQ
- Post-Comp
- Post-Delay

Setting an Aux as a monitor send – It is typical to set the source Post- Gate or Post-PEQ (so that the Compressor does not affect the monitors, but choose whether channel EQ does). Also set the sends Pre-Fade.

Setting an Aux as an effect send – Set the source Post-Delay and all sends Post-fade so that the effect follows the channel processing and fader levels.

Strip Rotary control Custom 1 and 2 views - These can be configured as dedicated Aux or FX sends or Direct Out level using the **Setup** / **Control** / **Surface Prefs** screen.

Groups / Aux / FX / Main Mix / Matrix

Routing:

- Inputs + FX returns > Groups
- Inputs + FX returns > FX sends
- Inputs + FX returns + Groups > Aux sends
- Inputs + FX returns + Groups > Main mix
- Groups + Auxes + Main mix > Matrix

3.17 Routing page – DCA Master

GLD provides 16 DCA Groups. These can be used as DCA Groups (level control) or Mute Groups (mute masters).

The following can be assigned to DCA Groups:

- Input channels
- FX returns
- FX sends
- Group masters
- Aux masters
- Matrix masters
- Main LR master

There are two ways to assign DCA Groups:

Using the touch screen – Press a DCA master Sel key. The screen opens in the DCA Routing page.

Touch the tabs within the page to access the assignments of the channels, FX and mixes to the DCA Group. Touch the buttons to assign to the DCA Group.

Using the GLD fader strips - Press a DCA master strip Mix key. Current assignments are shown in the source strip LCD displays. The 'ON' icon displays for sources currently assigned.

While holding down the Assign key press source strip Mix keys to toggle assignments on or off. Remember to press the master strip Mix key again to return to the main mix.

DCA Fader to 0dB option – Select this if you want to use the DCA as a **Mute Group**. This disables the DCA master fader and sets it to its '0' position. If you try to move the fader it will return to this position. Use the DCA Mute key as the Mute Group master.

DCA Groups explained

A DCA group provides a master fader and mute to remotely control the level of channels assigned to it.

Audio does not route through DCA groups as it does through conventional mix Groups. GLD provides both types of grouping. Use DCA Groups for level control and mute grouping. Use Mix Groups for grouped signal processing such as compression and for routing of grouped signals to Aux or Matrix mixes.

The DCA master affects the level and mute of an assigned channel back at its fader point. It is another level stage in line with the channel fader. It does not physically move the channel fader. A separate indicator next to the channel Mute key shows if it is muted by one or more DCA groups.

Channels can be assigned to multiple DCA Groups. For example, drum channels could be assigned to a DRUM DCA and also to a BAND DCA.

To use DCA Groups

Assign channels to the DCA Group.

Set the DCA master fader to its '0' position. This is its normal operating position. This position results in the same level as if the channel was not assigned to the DCA.

You can adjust the level of the assigned channels up or down using the master fader, but always start with it set to '0'.

Note If you get no signal when you raise a channel fader check that it is not turned off by a DCA master.

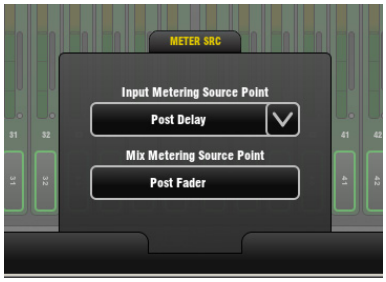
4. Meters Screen

4.1 Input Meters page

Meters for all 48 Input Channels are displayed on this page.

Channel Name and Colour is shown below each meter.

The Compressor Gain Reduction meter is shown to the right with the Gate Active indicator below it. These show activity in red when switched In, and in grey when switched out of circuit.



METER SRC pull-up window

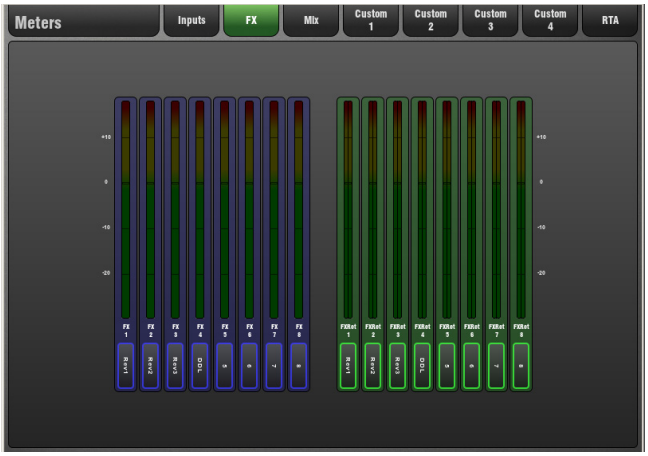
The Input meter source point can be globally set for all meters in the Inputs page. This does not affect the fader strip or other screen metering.

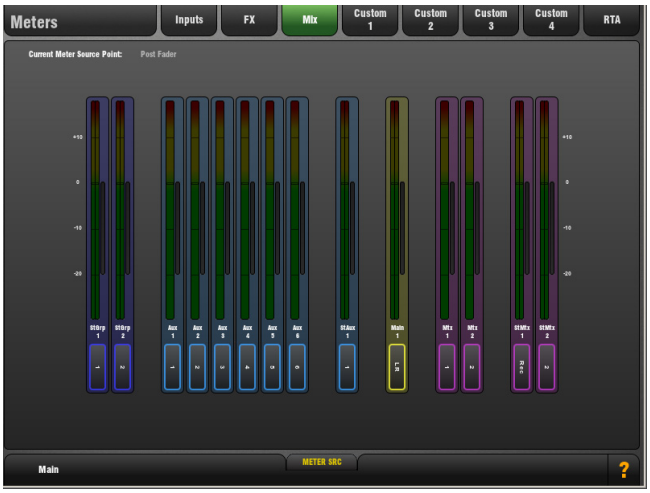
The following options are available (all Pre-Fader):

- Post-Trim
- Post-Gate/PEQ
- Post-Compressor
- Post-Delay (Default)

4.2 FX and Mix Meters pages

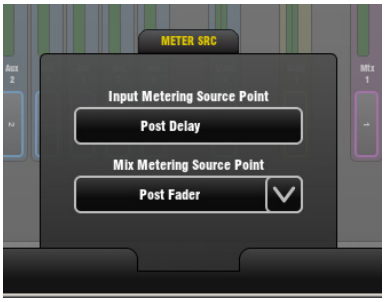
These pages show meters for all FX and Mixes available.





The Compressor Gain Reduction meter is shown to the right with the Gate Active indicator below it.

METER SRC pull-up window



The meter source point can be globally set for all meters in the Mix page. This does not affect the fader strip or other screen metering.

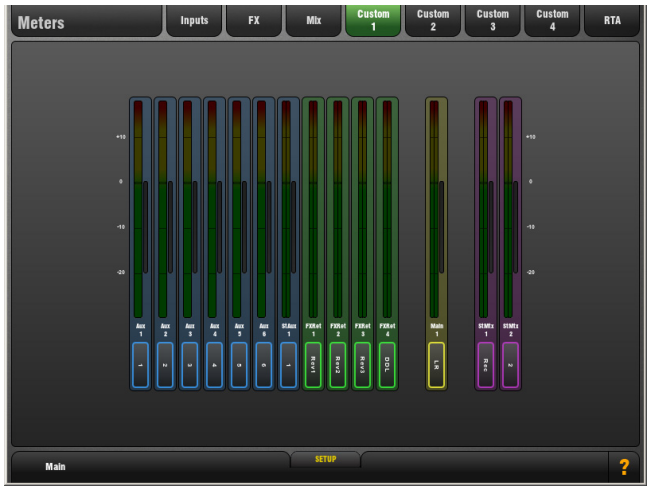
The following options are available:

- Pre-Insert
- Post-Insert Return
- Post-PEQ
- Post-GEQ
- Post-Compressor
- Post-Fader (Default)

4.3 Custom 1-4 Meters pages

You can assign 4 Custom meter views.

These can be viewed in the **Home** or **Meters** screens.



Custom Meters let you organise the meters of channels and mixes you are using into a single screen view, leaving off those you are not using.

Assign up to 32 meters per page in two rows with up to 16 meters per row.

SETUP pull-up window

Open the pull-up to assign meters to a Custom Meter page.

Use the tabs at the side to access available Inputs, FX sends and returns, Mixes and PAFL monitor.

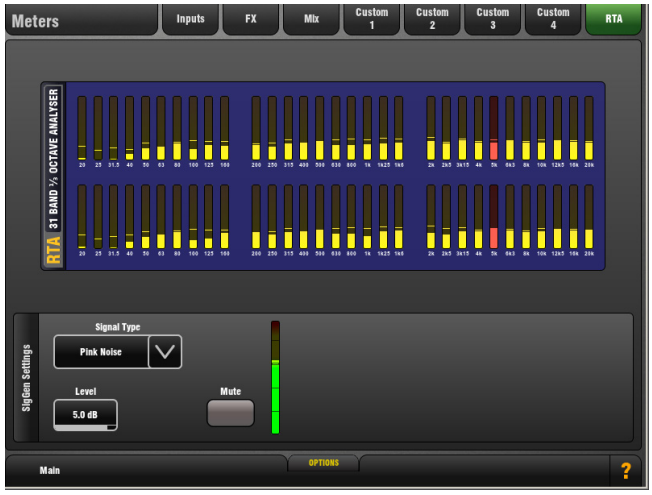
Touch items in the top window to drop them into available empty slots below, or drag them into the position you require. You can:

- Add meters by touching or dragging
- Insert meters by dragging between slots
- Remove meters by dragging out of the window
- Add spaces between meters
- Add or remove the second row

Touch Apply to accept or Cancel to discard the changes. Exit setup by closing the pull-up screen when you are finished.

4.4 RTA

The RTA provides a 1/3 octave 'Real Time Analyser' frequency display for the signal currently PAFL signal.



The RTA can be viewed in the **Home** or **Meters** screens. It also displays on the strip meters when GEQ Fader Flip is active. It separates the signal being listened to on the PAFL monitor into 31 frequency bands and shows the relative strength of each as a real time display.

When enabled, the RTA Peak Band option displays the dominant frequency as a red bar in the RTA screen or by lighting the red Pk indicator on the related strip meter while in GEQ Fader Flip mode. Only one band will be lit red.

Note The RTA follows the PAFL signal. Check that you have selected PAFL for the signal you wish to analyse.

OPTIONS pull-up window

Choose to hide or show the RTA Peak Band display on the RTA screen or GEQ Fader Flip views.

Application

Use the RTA to help identify problem frequencies such as instrument or room resonance or feedback.

With the Peak Band option enabled the RTA is a good tool to help identify feedback frequencies while ringing out stage monitors. Carefully raise the level of a vocal mic until the monitor just begins to 'ring'. That frequency will be shown as the peak band and can be cut on the related Aux mix Graphic EQ.

5. FX Screen

5.1 Front Panel view

Access the FX using the FX screen or by pressing Sel keys for individual FX Send or Return fader strips.

The FX Screen presents the 8 virtual rack slots shown across the top of the screen either empty or with FX devices already loaded. The FX name, current library loaded and metering is shown next to each icon.

Select one and open up either the Front or Back Panel view.

To change or load an FX:

- Touch the panel name box and scroll using the Rotary
- Touch the Library button to open the Library page

The **Front Panel** view presents the FX parameters. Touch a parameter box or control and use the screen Rotary to change the setting.

The **Lower panel** shows the current routing, levels and metering for the FX device.

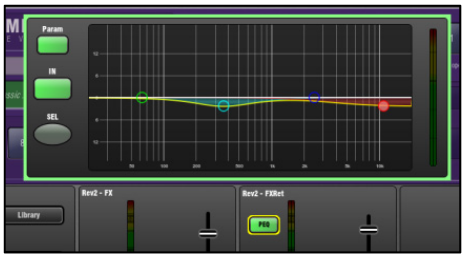
Mix>Return type FX - The Send and Return paths are shown. These are the same controls as found on the associated Send and Return fader strips.

Insert type FX – Shows which channel the FX is inserted into, the Insert In/Out switch and a Dry/Wet control to adjust the balance of direct and effect signal.

Note If you are not hearing the effect when you raise a channel in the FX mix then check that the related Send master and Return faders are turned up and that they are not muted or affected by a DCA Group.

PEQ – Each FX Return has a 4-band Parametric Equaliser. Touch the PEQ button to open the FX PEQ popup. Touch again to close it. Touch the Param button to choose to adjust the EQ by dragging a curve or changing values using the Rotary.

The PEQ can also be accessed by pressing Sel on the FX return (IP FX) fader strip.



5.2 Back Panel view

The Back Panel view lets you view and change how the FX are patched into the GLD signal path.

You can patch each FX slot as:

- Unassigned
- Insert
- Mix>Return

Touch Apply or Cancel to accept or discard your changes.

Unassigned – The FX device is not patched.

Insert – Insert an FX device into an input or mix channel. This breaks the signal path at its insert point to route it through the FX and back into the channel. An Insert In/Out switch and Wet/Dry balance control is provided.

Mix>Return – Patch the FX device as a 'System Effect' where channels can be mixed to the effect using a Send bus and returned through a dedicated stereo Return (FXRet) channel to add the effect (wet) signal to the direct (dry) signal routed to the main mix.

Mix>Return is used for effects such as reverb and delay.

GLD has 8 'short' stereo Return channels dedicated to the FX. Together with the 48 input channels this provides up to 56 sources to the mix.

Chaining FX - FX devices can be routed to each other. For example you could patch the output of a Delay unit into a Reverb, and then return the reverb to the main mix.

View Outputs – Touch the View Outputs button to open a window showing where the outputs of the FX device are routed. Each slot can handle up to 8 outputs depending on the device loaded. Most provide 2 outputs (stereo).

Unassign – Touch this button to reset the FX device outputs to feed its related short FX Return channel.

5.3 FX Libraries

Touch the Library button to open the Library window. Touch the Exit Library button to close the window.

The Libraries are grouped according to FX type. You can choose to load one of many 'Factory' presets from the menus, or to recall a previously stored 'User' preset from the memory or directly from your USB key.

Factory, User/USB – Touch to show the available Factory presets or to show the User presets currently stored in GLD memory and those found on a USB key plugged in.

Recall – Scroll through the list and touch to select a preset. Touch Recall to load the highlighted preset.

Store New – Touch to store the current FX settings as a User preset. Name the preset using the touch keypad.

Overwrite - To update an existing User preset first select it in the list then touch the Overwrite button. Factory presets cannot be overwritten or deleted.

User Libraries can be deleted or transferred to or from your USB key using the **Setup / Memory / Library Manager** page.

Note You do not need to use up FX slots to attach Graphic Equalisers to the mixes. Each of the 20 mix outputs has a GEQ available within its processing screen.

5.4 FX Devices available

SMR Reverb

SMR Live is a Spatial Modelling Reverberator featuring 4 fully configurable complex spatial models Classic, Hall, Room and EMT. Each of these models use different reflection and decay algorithms to provide natural sound spaces ideal for Live sound.

Classic Emulates high quality plates. Shape tailors the reflection pattern. Min position for fast attack, mid position for rounded early reflections, and max position for separated early and late reflection patterns. Adjusting shape/size/predelay with decay can result in some great Hall reverbs. Small size settings not very useful in live sound applications.

Hall Emulates a real Hall reflection model. No shape control, reflections are controlled with Size, Source diffusion and Ref detail with rich deep decay spectrum.

Room Accurately emulates a characteristic complex room reflection pattern.

EMT Classic plate emulation. A great plate with good tonal balance for live use. Decay setting around 2 seconds is typical.

The SMR primary controls essential for live mixing are always visible:

LF Cut - 0 to 400Hz, 24dB/octave high pass filter to cut low frequencies of the input signal to the reverb.

HF Cut - 2kHz to 20kHz, 24dB/octave low pass filter to cut high frequencies of the input signal to the reverb.

Predelay - The time it takes before the reverb reflections and decay are heard.

Decay Time - Broad spectrum decay control. The time it takes for the reflections to decay to 60dB below the level of the direct sound is known as the RT60, an important measurement of reverb in a room.

HF Decay - Frequency at which the high frequency decay attenuation starts.

HF Slope - The attenuation slope of the high frequency decay. HF Decay and Slope are both essential for high frequency decay spectrum adjustment in a live space. Setting HF Decay and Slope low creates a natural sounding decay. Setting HF Decay and Slope high creates a dramatic decay.

In addition there are 5 pages of scrollable ‘Expert’ pages for the Reverb which allow precision control:

Page 1 - Reflections - Source Diffusion, Size, Shape, Ref Detail.

Dedicated to reflection control. Keep source diffusion and detail low to help intelligibility. Small sizes are not typical for live applications. ‘Shape’ is only available in the Plate model.

Page 2 - Echoes - Echo1, Echo1 level, Echo2, Echo2 level.

Dedicated page for user defined echo reflections. You can insert main reflections to create Echo reverb sounds. Echo1 goes to left Echo 2 goes right. Echoes may be layered over the reverb.

Page 3 - Decay Texture - Body Diffusion, Tail diffusion, Mod depth, Mod speed.

Separate body and tail diffusion controls can help prevent metallic decay through too much diffusion. Modulation depth and speed increase reverb density and add chorusing, effective on percussive program but not as useful on piano and vocal.

Page 4 - Decay Spectrum - LF decay, LF XOver, Colour, Colour Freq.

Separate LF decay control with crossover frequency and decay time, useful for live work. Colour is a tuneable element in the decay. High Freq colour settings can enhance ambience, although it can sound metallic with some programme.

Page 5 - Reflection/decay level - Reflection level, decay level.

These controls are dedicated to balancing reflection and decay to improve intelligibility.

Preset Name is displayed in the simulated LCD window. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

2-Tap Delay

Separate left and right tap delay outputs from a mono’d input. Left and right delay can be dialled in using the screen Rotary, tapped on screen or tapped using a SoftKey. Individual tap indicators flash at the tap rate.

The left and right delay taps can be ganged to mono using the **Link** button. There are adjustment controls below each delay tap for fine tuning the values.

The regen path (feedback) has a low pass damping filter. This filter has a frequency and a slope control for fine adjustment of loop delay HF attenuation. There is also a stereo output width control.

LF Cut - 20Hz to 8kHz HF Cut 400Hz to 20kHz These filters control the input spectrum. The 24dB/octave slope gives brick wall control on what signal spectrum gets delayed.

Delay range - 5ms to 1360ms Delay tap controls Left and Right are tappable, shown with flashing leds.

Fine delay Left and Right adjustment in 1ms steps.

Link sets Left and Right tap delays equal with one control.

Scatter modifies the delay pattern between Ping-Pong and scattered. Scatter off - creates classic Ping-Pong delays. Scatter in - reconfigures the regen path giving one delay on the shortest side and regen on the longest side replacing Ping-Pong bounce with some interesting delay patterns. For example, an echo on one side and a regen echo pattern on the other.

Feedback controls the regeneration of the delay, creating loop delays. Feedback filter controls HF attenuation in the regeneration path/loop delay. The frequency and slope controls give the engineer precise HF attenuation control in the delay loop. Slope set mid for typical settings. Slope minimum is a light HF attenuation setting, maximum position is a large HF attenuation setting.

Width controls the stereo width of the output. Min position = mono, max position = LR.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Gated Verb

An accurate emulation of the classic 80's Gated Reverb plus two other variants called 'Panned' and 'Powerbox'. The user interface gives instant access to Lo-cut Hi-cut decay spectrum filters and the gate envelope controls - predelay, attack, hold and release.

We depart from the 80's and provide a visual representation of the gate time domain envelope helping the engineer 'see the time envelope of the gate'. Also included are mono, stereo and wide imaging options and decay diffusion control.

Lo cut Decay Filter - 20Hz – 6kHz, 24dB/octave Hi Pass Filter to control the decay spectrum.

Hi cut Decay Filter - 400Hz – 20kHz, 12dB/octave Low Pass Filter to control the decay spectrum.

Time domain Gate envelope controls:

Predelay - 0 - 170ms adjustable pre-delay of gate opening (prior to attack starting).

Attack - Time period for gate to open.

Hold - Time period that the gate remains fully open.

Release - Time period for gate closing.

Maximum gate open time (attack + hold + release) = 500ms.

Models:

Classic nonlinear - Emulates the faithful 80's classic gated reverb.

Panner - Rapid panning between L and R in the reverb. Short time movement FX.

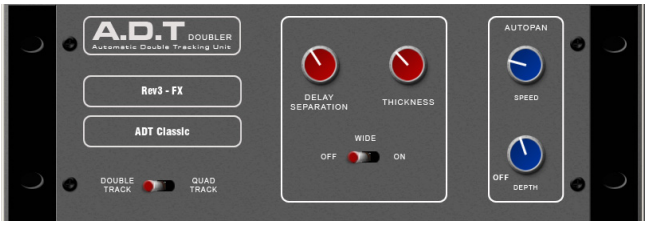
Powerbox - Max power in gated energy. Not as de-correlated as classic non-linear.

Mono/**Stereo**/**Wide** - Option to switch between mono, stereo and wide stereo field output.

Diffusion - Minimum diffusion for 'clear' low diffusion in the reverb decay. Maximum diffusion for 'rich' highly diffused reverb.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

ADT Doubler



An Automatic Double Tracking module capable of creating short echo/chorusing, classic double tracking and 'slapback' tape delay loops.

The ADT is very effective in creating stereo double and quad tracked voices from a mono input. There is also a stereo width enhancer. The tracked voices can be auto panned in the stereo field. The ADT is perfect for creating classic doubling effects, thickening programme on stage or developing a stereo sound field without resorting to chorusing.

The module is stereo in, stereo out (with software normalised mono input if the source is mono). ADT will create a stereo field from a mono source.

Delay Separation - Min position for short delay separation producing Chorusing with Thickness set high. Mid position for classic doubling. ¾ position with thickness high for echo-chorusing. Max position with low thickness for tape loop and slapback Echo.

Thickness - Creates flutter modulation in delay voices. Very high settings can smear detail on some programme.

Double/**Quad Track** - Clear double tracking in the first position. Switch across for thicker quad tracking. With some programme Quad can get too thick and smear detail.

Wide - Extends the delay separation differences between Left and Right enhancing the stereo image.

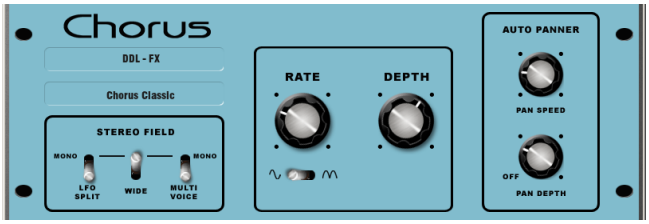
Autopan - Automatically pans the chorus voices (wet signal only, not the dry signal). This is level modulation of the wet effect (not the dry signal) across the stereo field. It is not complete signal auto panning.

Depth - Determines the amount of movement across the stereo field. Use higher settings for a stronger effect.

Speed - Determines the speed of movement across the stereo field.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Chorus



Chorus derives from the late 80's where different stereo field creation techniques influenced the sound of each chorusing unit.

Chorus recreates the classics using 3 stereo-field emulations. These emulations can be switched in any combination creating many different stereo fields. All switches up gives no stereo enhancement.

The traditional Rate and Depth controls cover the centre panel. The LFO driving the modulator can be switched to sine or rectified shape. The auto-panning section pans the chorus voices giving stereo level shimmer, another classic modulator effect.

The module is stereo in, stereo out (with software normalised mono input if the source is mono).

Stereo Field emulations - All switches up turns all stereo enhancement off. There are 3 stereo field emulations each active with switch down. These create stereo fields from a mono input. The 3 emulation switches can be used in conjunction with each other creating many different stereo field sounds, just like a number of classic chorus effects. Be careful as all 3 selected together can sound muffled rather than more 'stereo' with certain programme.

LFO Split uses two separate LFO's for left and right, creating a rich stereo image that varies with rate.

Wide pushes the left and right voices apart producing a very wide stereo image, but can sound phasey on some programme.

MultiVoice stereo field is created through multi-voice splits across left and right. It typically produces a thick stereo sound, but can sound muffled on some programme.

Rate - Min position for slow speed, best used with high depth settings for slow, deep chorus. Mid position for medium speed. Use with mid depth for classic chorus sounds. Max position for fast speed. Use with low depth settings for lively chorus.

Depth - Min position for small voice pitch variation. Useful with fast rates. Max position for large voice pitch variation. Can cause audible pitch change. Best with slow rate.

Sine/Rectified - modulator Switches between sine wave and rectified LFO modulator.

Autopan - Automatically pans the chorus voices (wet signal only, not the dry signal). This is level modulation of the wet effect (not the dry signal) across the stereo field. It is not complete signal auto panning.

Pan Depth - Determines the amount of movement across the stereo field. Use higher settings for a stronger effect.

Speed - Determines the speed of movement across the stereo field.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Symphonic Chorus

A faithful emulation of the 80's classic chorus effect. Simple to use and frequently requested. The unit has just two controls, Frequency and Depth, controlling the rate and delay range of the stereo modulator. The unit produces a rich, lively and wide chorus sound with a suggestion of very mild phasing / flanging.

Live engineers commonly use this unit for thickening vocals and strings and creating a spatial sound from a mono source. This has led to two factory presets 'SymphonicVox' and 'SymphonyStrings'.

The module is stereo in, stereo out (with software normalised mono input if the source is mono).

Frequency - Adjusts the modulator speed. Minimum setting is a very slow modulation. Maximum is fast modulation. Like the original 80's unit, the maximum frequency setting is extreme and should be used with shorter depth settings to avoid space ship sound effects. Typical settings are just left of mid position.

Depth - Adjusts the modulator delay depth. Minimum position is short delay depth producing subtle modulation. Some programme may be more prone to phasing/flange type sounds. Mid position is a typical delay depth setting creating tonal depth with rich chorusing. High settings of depth can sound extreme if the frequency is also set too high. Mid position is a typical starting point.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Flanger

Three classic flanger effect emulations – 'Ambient', 'Vintage' and 'Wild'. During research of classic pedal flangers we found numerous LFO modulators and stereo splitting techniques. We implemented them all.

For classic deep flange set Stereo Split and Stereo Spread off, pick triangular modulation, Vintage type and adjust Depth and Regeneration. The Manual switch overrides the LFO, for manual flange sweeps, only found on few historic flangers.

The module is stereo in, stereo out (with software normalised mono input if the source is mono).

Stereo Split Uses two separate LFO's for left and right, creating an enhanced stereo image with left and right flanging in different directions. Can sound very 'psychedelic'. Enhanced Stereo Split can reduce the intensity of the flange zone.

Stereo Spread Creates an enhanced stereo image by offsetting left and right flange voices with dynamic delay. Can sound super wide stereo or phasey depending on programme. Enhanced Stereo Spread can reduce the intensity of the flange zone. With both Stereo Split and Spread off the stereo image is preserved. For classic deep traditional flange effect turn both Stereo Split and Spread off.

LFO Type selector:

Manual Speed control becomes a manual sweep control (LED goes green). Sine, Rectified sine, Inverted rectified sine, Triangular Shape of auto oscillation. Speed Ranges from off to fast modulation. The LED goes red when in auto mode, green when in Manual mode.

Depth - Adjusts the flange zone depth. Min position operates in a tight flange zone. At max position the effect sweeps in and out of the flange zone creating a greater tonal change. High settings of Depth can sound extreme.

Regenerate - Produces feedback into the flanging delay line, making the flange more pronounced. Min position can result in no audible flange. Max position can sound too aggressive.

Emulation Types:

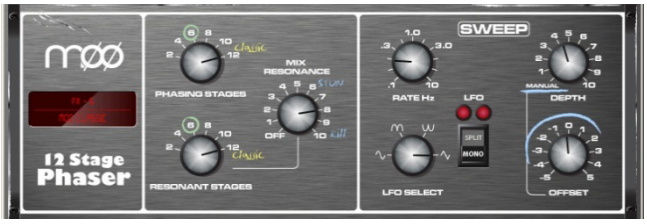
Ambient - HF rich, subtle flange, creating ambience. Great with overhead mics for a spatial sound.

Vintage - Creates a classic silky sound reminiscent of tape machine flanging. Regen control is well balanced LF and HF and the flanging does not get too aggressive.

Wild - An untameable, dramatic effect. The sound turns inside out.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

MOO 12 Stage Phaser



A classic 12 stage emulation producing rich textured phasing with plenty of control. The user has control of number of stages, feed forward and feed back, and 'zero' depth manual mode – to manually sweep the Phaser using the offset control.

The classic characteristic sound is produced by careful emulation of the phase chain and operating frequency range around the offset control. Equally important is the emulation of harmonic signatures produced by the companded analogue delay lines producing rich harmonics adding thickness to the sound. The split/mono LFO switch toggles between in-phase intense phasing and split-phase mode - creating spatial rotary effects.

There are many different possibilities through varying the number of stages in the phase chain output or the feedback resonance path. Setup depends on the instrument applied to the unit. Lower numbers produce clean thin sounds. A higher numbers of stages produce a richer phasing sound.

Phasing Stages - Selects which point in the phase chain is taken as output. 6 stages produce a clean phase. However the classic rich sound is 12 stages.

Resonant Stages - Select which point of the phase chain is taken into the feedback 'mix resonance' circuit. 12 Stages is classic.

Mix Resonance - Controls the amount of feedback into the phase chain input. Classic sound around 5 - 8. Full resonance at 10.

LFO Rate - Variable between 0.1 to 10Hz

LFO Select switch - Sine / Rectified / Inverse Rectified / Linear(Triangular) are selectable. Classic unit uses Linear(Triangular). Slow Phasing sounds great with Sine. Rectified variants can create notches or phase spikes which can sound cool. Rectified variants are twice the speed.

LFO split switch 'Mono' setting configures the Left and Right Phase Chains to modulate in phase, the strongest effect. 'Split Phase' runs Left and Right not in Phase, creating a stereo swirl for added spatial rotary effect.

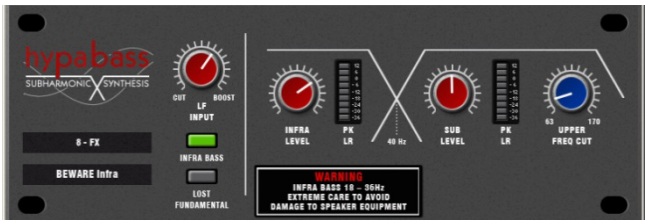
Depth - Controls the amount or depth of LFO modulation in the phase chain. Extreme settings can sound unnatural. Setting this control to minimum turns the LFO modulator off

and relies on manual sweeping of the phase chain using the ‘offset’ control.

Offset - Shifts the operating frequency range of the Phaser. Maximum settings force the Phaser to operate in higher frequencies. Lower Offset settings allow lower frequency phase sweeps (more intense). In manual mode (Depth = 0) the user can adjust the phase sound with this control.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Hypabass



A sub-harmonic synthesis unit used in the live sound environment to generate infra and sub bass spectrum from weaker bass programme. We initially emulated the American analog classic, but implementation in DSP gave us the ability to use more sophisticated techniques in the sub harmonic generator and filtering stages. The result is reduced distortion in the infra bass section and much better independent control of the infra and sub bass spectrum, essential for live PA use.

The module is stereo in stereo out (with software normalised mono input if source is mono). The stereo signal remains stereo throughout the signal path. There is no mono’ing to produce either the infra or sub bass path.

• **BEWARE** - Extreme care is needed. Driving high infra bass levels into insufficient speakers may lead to speaker equipment damage.

Operation

‘Hypabass’ is a sub harmonic synthesis module. An LF input de-emphasis/emphasis trim stage feeds the sub harmonic generator creating low distortion, low frequency spectrum below the source input spectrum. This sub harmonic spectrum is then band-split into Infra Bass (18-36Hz) and Sub Bass (36 Hz upwards). This allows Infra and Sub bass to have separate level controls, essential for controlling ‘Infra Bass’ and ‘Sub Bass’ preventing speaker equipment damage, and dealing with resonant acoustics or speaker resonance with exotic LF cabinet porting. Separate Infra Bass and Sub Bass meters are provided. Each are peak detected from both Left and Right signal paths and presented on one meter.

UPPER FREQ CUT - Controls the upper bandwidth of the sub bass harmonic spectrum. This setting depends greatly on the sub bass speaker equipment and the original bass content. Typically a low setting is common to prevent the generated sub bass upper harmonics clashing with the original bass content. Beyond mid position is only useful for Lost Fundamental mode.

LF INPUT BOOST - This filter stage provides emphasis on the input spectrum into the sub harmonic generator and can be used as a global ‘more or less’ control once everything else is setup.

INFRA BASS Mode - This is the default mode. Energy in the Infra and Sub bass spectral regions is synthesised from the input bass content. Using the independent level controls the engineer can balance Infra and Sub bass.

• Avoid infra bass damaging equipment or sub bass resonating. UPPER FREQ CUT needs to be kept low to prevent the generated sub bass upper harmonics clashing with the original bass content.

LOST FUNDAMENTAL Mode - These harmonics can be output to a mid-range driver to create apparent bass energy since these upper harmonics are musically related to the original bass content. Useful for increasing bass perception in music driving mid-range speaker systems. This turns the Infra bass section off and modifies the output spectrum to operate in the typical upper bass region. Using the Sub level and UPPER FREQ CUT the engineer can manipulate the output to contain harmonics that are above the input bass spectrum.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Empty Rack

The GLD RackFX is a 'virtual outboard effects rack' with 8 slots. These can be loaded with different types of effects units or left empty.

To load an effect – Touch the Library button and select an FX type and preset from the lists. You can choose to view the built-in Factory or User presets, or those found on a USB key when plugged in. Touch Recall to load the FX unit.

To remove an effect – Touch the Library button and select ‘Empty Rack’ from the list. Touch Recall. The current FX will be removed and the rack slot left empty.

De-Esser

Based on the flagship iLive FX engine, the De-Esser emulates the classic Auto-Threshold circuit commonly found on high end hardware units. This produces a constant sibilance reduction regardless of signal level, resulting in a more natural De-Essing process. In comparison, threshold based De-Essing produces inconsistent reduction activity which can result in unnatural vocals.

De-Esser features an adjustable frequency point and a Listen button to allow monitoring of the sibilant region. The response of the De-Esser and the amount of reduction applied are adjustable to suit vocal programme.

The two channels are independent but their controls can be linked thanks to a latch switch.

Listen - A momentary switch used to monitor the left or right channel to listen to the 'ess' band to which the gain reduction will be applied. The Listen button is independent of the "Link" configuration so that even when Link is set, the left Listen monitors the left channel and the right Listen monitors the right channel.

Frequency - Adjusts the lower boundary of the region thought to contain sibilance. This will typically be around the 6kHz range. Adjust the value to capture the "ess" heard on the channel. The frequency is adjustable from 3kHz to 8kHz. Like many advanced De-Essers this is not a simple notch filter. Typically you need to set the frequency slightly lower than the centre frequency of the 'ess'.

Reduction - Provides control over the amount of gain reduction applied to the selected frequency band. At "Min", the De-Esser will not attenuate the band. At "Max" the De-Esser will attenuate the band by up to 24dB.

Response - Adjusts the speed with which the De-esser responds to the presence of ess/sibilance. Medium setting corresponds to the speed found on the iLive platform. Fast setting is much faster, and Slow is roughly half the response time of iLive. To avoid slight artefacts in vocal programme try using the Slow or Medium settings.

Link - Forces the left and right De-esser channels to be matched. If the two channels have different, non-zero settings and the link control is activated, the right channel settings will be set to match those of the left channel. If the link control is then de-activated, the right channel will then reassume the settings it had before the link was initially activated.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Rotator

The Rotator is a model of a traditional rotary speaker cabinet such as those used to create the familiar Leslie organ sound. It simulates the rotating horn (treble) and woofer (bass) along with their crossovers.

Rotors – Turns the treble/woofer motors on/off. When the motors are off, the speakers are both facing the front of the unit. When switched on, the motors will ramp up to the speed indicated by the Speed control. The woofer motor accelerates more slowly than the treble motor. When switched off, the motors will then decelerate to the minimum speed, until stationary and facing the front of the unit. The On/Off switch controls only the rotor speed, not the whole effect.

Speed - Controls the speed of speaker rotation. Its lower setting is 0.1Hz (10 revolutions per second). The other two marked positions emulate those provided on classic rotary speakers: Chorale (indicated as "chor") and Tremolo (indicated as "trem"). The big lamp flashes to show the treble speaker speed.

Width - Adjusts the stereo width of the two microphone outputs, and therefore the spatial "depth" of the effect. At the "Mono" setting both simulated microphone outputs are summed equally to the left and right outputs. At the L/R setting the simulated left/right microphone outputs are sent to the left / right output channels correspondingly.

Balance - Adjusts the relative weighting of the treble/woofer speakers. At the "LF" setting, only the output of the woofer is heard. At the "HF" setting, only the output of the treble horn is heard. You can balance between the two.

Deflectors - Simulates the attachment (On) or removal (Off) of the deflectors on the end of the treble horn.

Back Panel - Simulates the attachment (On) or removal (Off) of the cabinet back panel. This changes the simulated cabinet response as appropriate.

Mic Select - Allow for configuration of the two simulated microphone positions - Side-Side (microphones on opposite sides of the cabinet), Front-Back (mics at front/back of the cabinet), Front-Front (both microphones at the front of the rotary speaker). In Front-Front mode, the "Separation" rotary becomes available. This allows for the distance between the two front-positioned microphones to be adjusted.

Tube Drive - Controls the tube (valve) drive simulation. With the control at "On" the tube drive is active. With the control at "Off", the tube drive is completely bypassed. The tube drive rotary control adjusts the depth of the distortion (1 = slightly warm, 11 = distorting).

Mains Hum Panel - Adjusts the level of simulated mains hum introduced.

50/**60** - Switches between mains frequencies typical to the UK (50Hz) or US (60Hz).

VS1 Vocal Shift

VocalShift VS1 is a stereo vocal pitch shifter squeezing two channels of high quality pitch shifting into a single effect. It has a very low latency (<6ms), covers the whole vocal frequency range, and minimises the phasing and flutter artifacts common with many pitch shifters.

VocalShift allows large shifts of up to +/- 1 octave, with a further switchable octave downshift. The wide range makes it ideal for theatrical or more extreme musical effects. The left and right channels are fully independent, allowing separate, high quality pitch shifting on each.

The two channels can be linked and reset to flat (zero shift) using single button presses.

Semitones - Sets the amount of pitch shift applied to each channel in semitones. The range is -12 (one octave downshift) to +12 (one octave upshift). The current value is displayed in the centre of the rotary. When 'active', the control glows yellow/orange. In Link mode, both corresponding rotaries on the left and right channels will be illuminated. A change to either will then be reflected in both.

Cents - Sets the amount of pitch shift in cents (100 cents = 1 semitone). This is added to the setting of the Semitones (and oct down switch) control to give the overall shift (+1 semitone and +50 cents = +150 cents pitchshift). The cents control is useful for providing very small pitch shifts, for example for phasing and doubling effects.

Oct Down Switch - Provides an additional 1 octave downshift to the current pitch shift settings (i.e. +12 semitones and -1 octave = no overall shift).

Flat - Sets all pitch shift controls to zero (Semitones, Cents and Oct Down are all set to zero).

Width - Controls the stereo width of the two pitch shifted voices, and therefore the weighting of each in the left/right output channels. At the "Mono" position, the left and right channels are mixed equally to both left and right channels resulting in a centre pan, mono effect. At the "L/R" position, the left voice is fed only to the left channel and the right voice to the right channel. Other positions graduate between the two.

Link - Forces the left and right voices to be matched. If the two channels have different, non-zero settings the right channel pitch shift settings will be set to match those of the left channel. If the link control is then turned off, the right channel will restore its settings from before the link was turned on. The Link control links the Semitones, Cents and Oct-Down control. Pressing either "Flat" switch when Linked results in both voices being set to zero.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Pitch Doubler

PitchDoubler is a stereo, pitch shifting doubler effect generating the effect of additional voices from its input. It is based on the same pitch shifting technology as VocalShift, with the associated low latency (<6ms), wide frequency range (down to around 80Hz) and minimal phasing / flutter artefacts. The effect squeezes two channels of high quality pitch shifting into a single effect slot, along with further features such as adjustable delay and modulation.

The PitchDoubler has completely independent left and right channels, which can be mixed to the left/right outputs of the effect by means of the stereo width control.

The doubling effect is achieved by provision of time delay, and modulated pitch shift. Sliders are provided on each channel for independent control of the delay (0 – 25ms) and the pitch shift (-100 -> +100). A pitch modulation LFO module, with adjustable rate and depth, provides a natural variation in the pitch shift.

Delay - Sets the amount of delay applied to each voice. It is adjustable from 0 to 25ms. A readout of the delay value is provided below the fader.

Pitch - Sets the amount of pitch shift provided, varying from -100 cents (= 1 semitone) at the lower position to +100 cents at the upper position. The centre position corresponds to zero pitch shift. A readout of the current pitch shift value is provided below the fader.

Width - Controls the stereo width of the two voices. At the "Mono" position, the left and right channels are mixed equally to both left and right channels resulting in a centre pan, mono effect. At the "L/R" position, the left voice is fed only to the left channel and the right voice to the right channel.

Level - Provides attenuation for each voice in the doubler. A level of 0dB will pass the voice without any attenuation. A level of -6dB will pass the voice at half volume, and -Inf will zero the output. A readout of the current gain value is provided to the bottom left of the rotary.

Pitch Mod Panel

Active - This panel presents controls for applying LFO (low frequency) modulation to the pitch shift setting. Make sure the "Active" switch is turned on.

Rate - Controls the rate (frequency) of the LFO applied to the pitch shift. The rate is adjustable from 0.1Hz to 10Hz.

Depth - Controls the depth of modulation applied to the pitch shift. Full depth (100) means that the pitch shift is modulated by the full amount of its current setting. If depth is 0, no pitch modulation is applied.

6. I/O Screen

6.1 dSNAKE I/O page

Patch Input and Output sockets on AudioRacks connected to the GLD via its dSNAKE port using this screen.

AR2412 Main AudioRack - 24 Mic/Line inputs and 12 XLR Line outputs.

AR84 Expander AudioRack connected to the AR2412 EXPANDER Port – 8 Mic/Line inputs and 4 XLR Line outputs.

The socket number and its assigned source or destination name and colour is displayed for each socket.

SOURCES pull-up window

An input socket could be assigned to multiple destinations, for example to one or more channels and the I/O Port. Use the pull-up to see a list of all destinations for a highlighted input socket.

Note You can patch a single input socket to more than one channel or destination, but you can patch only one socket to a single channel or destination.

Input sources can also be patched using the **Preamp** page for each channel. This method may be preferred.

Patching Outputs - Touch an output socket to highlight it. Use the lower part of the screen to select the GLD signal to assign to that socket. Open the menu to scroll through and select from the available sources. Choose the source number using the Start box and screen rotary.

To assign a range of output sockets touch the End box and turn the screen rotary. The sockets about to be assigned are highlighted on the screen.

Touch Apply to accept the assignment or Cancel to discard the change.

Touch the **Polarity** button to reverse the polarity of a highlighted output socket. This affects the socket only, not the source assigned to it.

Patching Inputs - Touch an input socket to highlight it. Use the lower part of the screen to select the channel to assign the socket to. Choose the channel number using the Start box and screen rotary.

To assign a range of input sockets touch the End box and turn the screen rotary. The sockets about to be assigned are highlighted on the screen.

Touch Apply or Cancel to accept or discard the change.

6.2 Surface I/O page

Patch Input and Output sockets on the GLD surface and on an AudioRack connected via the surface Expander port using this screen.

GLD rear panel sockets – XLR and RCA phono analogue I/O, and SPDIF and AES digital outputs.

GLD top panel USB – Patching for stereo audio playback and recording.

AR84 AudioRack connected to the GLD surface EXPANDER Port – 8 Mic/Line inputs and 4 Line outputs.

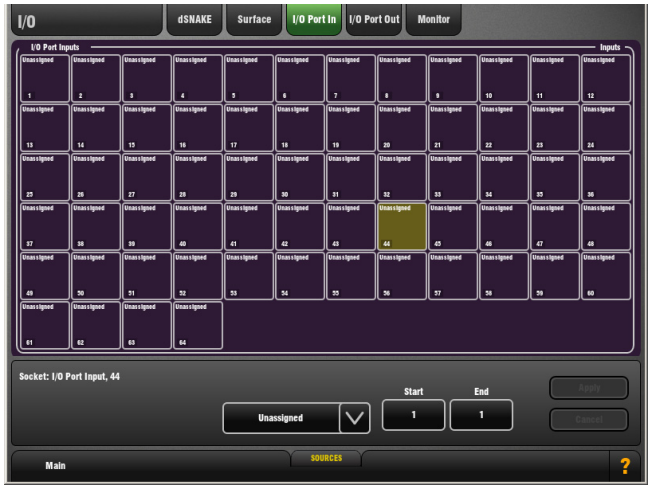
The socket number and its assigned source or destination name and colour is displayed for each socket.

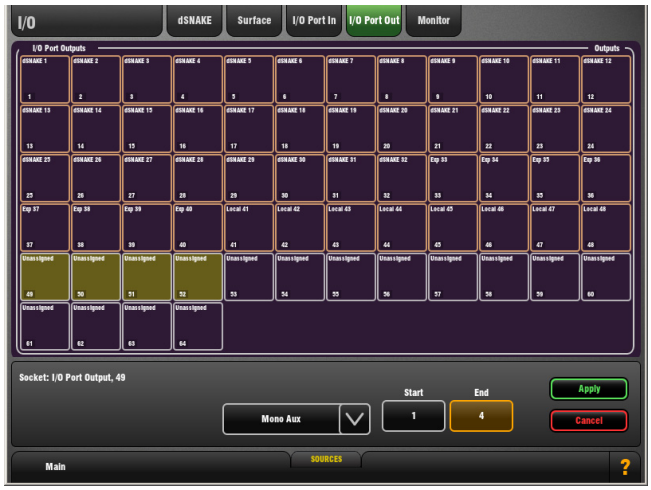
Assign output sockets from:

- Unassigned
- Input Direct Out
- Group
- Aux
- Main
- Matrix
- Rack FX
- USB playback
- Input socket
- I/O Port input
- PAFL monitor
- Wedge/IEM monitor

6.3 I/O Port In and I/O Port Out pages

Patch the Input and Output channels of the GLD I/O Port using these pages.





GLD I/O Port – Up to 64 channels of bi-directional audio via a digital audio network card fitted to the I/O Port slot. Various option cards are available from Allen & Heath, for example ACE, Dante, MADI, EtherSound, MMO.

The socket number and its assigned source or destination name and colour is displayed for each socket.

SOURCES pull-up window

An I/O Port input could be assigned to multiple destinations, for example to one or more channels and also to the port output. Use the pull-up to see a list of all destinations for a highlighted port input.

Note You can patch a single port input as the source to more than one channel or destination, but you can patch only one source to a single channel or destination.

Patching Outputs - Touch an output to highlight it. Use the lower part of the screen to select the GLD signal to assign to that output. Open the menu to scroll through and select from the available sources. Choose the source number using the Start box and screen rotary.

To assign a range of outputs touch the End box and turn the screen rotary. The outputs about to be assigned are highlighted on the screen.

Touch Apply or Cancel to accept or discard the change.

Touch the **Polarity** button to reverse the polarity of a highlighted output. This affects the output only, not the source assigned to it.

Patching Inputs - Touch an input to highlight it. Use the lower part of the screen to select the channel to assign the input to. Choose the channel number using the Start box and screen rotary.

To assign a range of inputs touch the End box and turn the screen rotary. The inputs about to be assigned are highlighted on the screen.

Touch Apply or Cancel to accept or discard the change.

6.4 Monitor Out page

Patch the dSNAKE Monitor sends using this screen.

Set the mode for the AR2412 MONITOR port:

ME-1 Mode – Sets GLD Monitor outputs 1-40 to work with the Allen & Heath ME-1 personal mixing system. Transmits audio, GLD channel names and stereo link settings over the link cable to the ME-1 system.

Aviom Mode – Sets GLD Monitor outputs 1-16 to work with an Aviom® A-Net 16 personal monitor system. Transmits audio and stereo link settings.

Note Mode affects only the MONITOR port on the AR2412 AudioRack. Other dSNAKE ports will always transmit using ME-1 mode.

Touch the **Stereo Link** button to link the related odd/even pair of outputs to be identified as stereo by a connected ME-1 or Aviom® personal monitor system.

6.5 MMO card in the I/O Port

Up to 64 GLD inputs and 64 outputs can be assigned to an audio option card fitted to the GLD-80 rear panel I/O Port. The **MMO** (Mini Multi Out) card provides several output formats – 24 channels of ADAT optical out, two 8 channel iDR links to connect the Allen & Heath iDR-8 or iDR-4 mix processors, or the iDR-Out or iDR-Dout output expander, and also compatible with the HearBus hub, and a 16 channel output compatible with Aviom® A-Net 16 or the Allen & Heath ME personal mixing system running in Aviom mode.

The card uses 56 channels from the port. These are assigned using the **I/O** / **Port Out** screen. The port channels map to the MMO sockets as below:

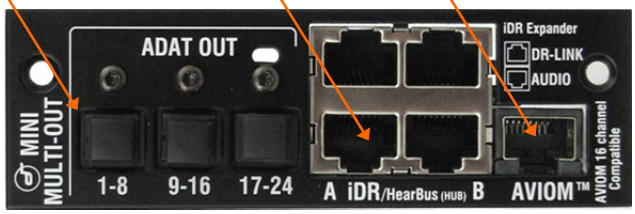
GLD Port Map	
Port Out:	**MMO**:
	ADAT
1	ADAT 1
2	ADAT 2
3	ADAT 3
4	ADAT 4
5	ADAT 5
6	ADAT 6
7	ADAT 7
8	ADAT 8
9	ADAT 9
10	ADAT 10
11	ADAT 11
12	ADAT 12
13	ADAT 13
14	ADAT 14
15	ADAT 15
16	ADAT 16
17	ADAT 17
18	ADAT 18
19	ADAT 19
20	ADAT 20
21	ADAT 21
22	ADAT 22
23	ADAT 23
24	ADAT 24

GLD Port Map	
Port Out:	**MMO**:
	iDR A
25	iDR-A 1
26	iDR-A 2
27	iDR-A 3
28	iDR-A 4
29	iDR-A 5
30	iDR-A 6
31	iDR-A 7
32	iDR-A 8
	iDR B
33	iDR-B 1
34	iDR-B 2
35	iDR-B 3
36	iDR-B 4
37	iDR-B 5
38	iDR-B 6
39	iDR-B 7
40	iDR-B 8

GLD Port Map	
Port Out:	**MMO**:
	Aviom®
41	Aviom 1
42	Aviom 2
43	Aviom 3
44	Aviom 4
45	Aviom 5
46	Aviom 6
47	Aviom 7
48	Aviom 8
49	Aviom 9
50	Aviom 10
51	Aviom 11
52	Aviom 12
53	Aviom 13
54	Aviom 14
55	Aviom 15
56	Aviom 16

Assign each output:

- Unassigned
- Input Direct Out
- Group
- Aux
- Main Mix
- Matrix
- Rack FX
- USB playback
- Input socket
- I/O Port input
- PAFL monitor
- Wedge/IEM monitor



7. Scenes Screen

7.1 Scene Manager page

Use this screen to work with the GLD Scene memories.

Overview

Up to 500 Scenes may be stored in GLD memory.

Scenes can be named and a description added.

One or more Cue Lists can be created from the Scenes.

All Scene parameters are stored.

A Recall Filter can protect selected parameters on recall.

A Recall Filter can be set per Scene.

A Scene edit confirmation popup option is available.

Scenes including their filters can be copied or cleared.

Channels and masters can be made Scene Safe.

Selected parameters can be made Scene Safe.

All Scenes, Cue Lists and Safes are saved with Shows.

Scene List – Choose to display the list of all 500 Scenes or the currently loaded Cue List. Touch to select a Scene. Swipe with your finger or use the Rotary to scroll through the list.

A Green Tick indicates that a Scene is stored.

Name - Touch the Name box to open the screen keypad. Type in a name up to 14 characters for the selected Scene.

Description - Touch the Description box to enter a note about the selected Scene.

Store - Touch a Scene to select it. Touch the Store button. This stores all parameters to the Scene.

Recall - Touch a Scene to select it. Touch the Recall button. This overwrites the current settings with those stored in the Scene.

Scene Recall Filter – Touch the Recall Filter button to view and edit the current filter settings for the highlighted Scene.

Delete - Touch a Scene to select it. Touch the Delete button to clear the name and contents of the Scene.

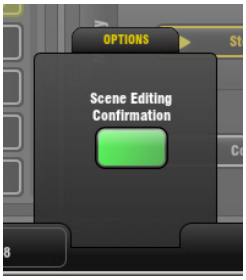
Note Deleting a Scene clears its contents, resets its Recall Filter to allow all parameters, and clears its name to be blank.

Copy - Touch to select the Scene you wish to copy. Touch the Copy button. Touch the Scene you wish to copy to. Touch the Paste button to paste the contents and filter settings to that Scene.

Note Copying a Scene copies its contents and Recall Filter settings. The Scene name and description are not copied.

OPTIONS pull-up window

Turn the Scene Editing Confirmation option on or off. This affects Scene Store, Recall, Delete and Copy using the Scene Manager page only.



- Off – The action is immediate.
- On – A popup opens to confirm or cancel the action.

How to recall a Scene

GLD provides several different ways to recall a Scene:

Scene Manager Recall – Touch the Recall button in the Scene Manager page. If the Scene Edit Confirmation option is turned on then a popup will appear. Touch Yes to confirm or No to cancel.

SoftKey Scene Recall – Individual SoftKeys can be assigned to recall specific Scenes. Recall is instant. No confirmation popup appears even if the option is set.

To recall a sequence of Scenes using a single SoftKey you could include the SoftKey in the Scene recall and assign it to recall a different Scene within each Scene it recalls.

Alternatively, to prevent Scene recall overwriting your SoftKey Scene Recall settings you could make these keys Safe in the Scene Safes page.

SoftKey Next/Prev/Go Recall – Assign SoftKeys as:

- Go – Instantly recall the highlighted Scene
- Next – Step to the next Scene in the list ready to recall
- Prev – Step back to the previous Scene in the list

An Auto-Increment option can be set so that pressing Go recalls the highlighted Scene and then steps to the next in the list ready to recall when Go is pressed again.

To avoid the need to open the Scene Manager screen refer to the **Current/Next status bar** information when working with the Go key. You can also set up a **Cue List** with the sequence of Scenes you wish to recall.

MIDI Recall – Specific Scenes can be recalled using MIDI Program Change messages.

7.2 Scene Recall Filter page

A Recall Filter can be set for each Scene to prevent certain channels or parameters being overwritten by the Scene when it is recalled. This lets you decide which parameters to recall per Scene. A Recall Filter affects just the Scene it is associated with.

Touch the Recall Filter button in the **Scene Manager** page to open the filter window.

Use the tabs on the left to view the different parameter groups. Swipe your finger up/down or left/right to navigate through the list.

To set or clear filter items

1 - Single items - Touch to toggle a button:

- Allow – Parameter will be recalled
- Block – Parameter will not be recalled

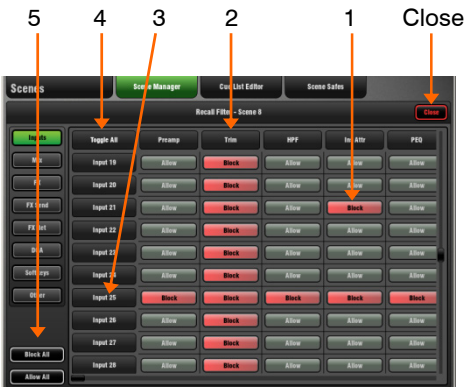
2 - One parameter for all channels - Touch label at top.

3 - All parameters for one channel - Touch label on left.

4 - All items in the current tab - Touch Toggle All label.

5 - All items in all tabs - Touch Block All or Allow All button at bottom left.

Touch Close to return to the main Scene Manager view.



Scene Recall Filter parameters

For Inputs, FX Returns, FX mix, Grp, Aux, Main Mtx:

- Preamp Gain, Pad, and 48V
- Trim and Polarity
- HPF
- Insert In/Out and operating level
- PEQ
- GEQ
- Dynamics – Gate, Compressor and Limiter
- Channel Fader
- Channel Mute
- Channel Pan
- Routing assignments, Sends and Pan
- Delay
- Direct Out
- DCA assignments
- Name and Colour

Parameters that can be filtered for DCA Groups:

- Channel assignments
- Master Fader
- Master Mute
- Name and Colour

FX parameters:

- Parameters for each of the 8FX units

SoftKeys:

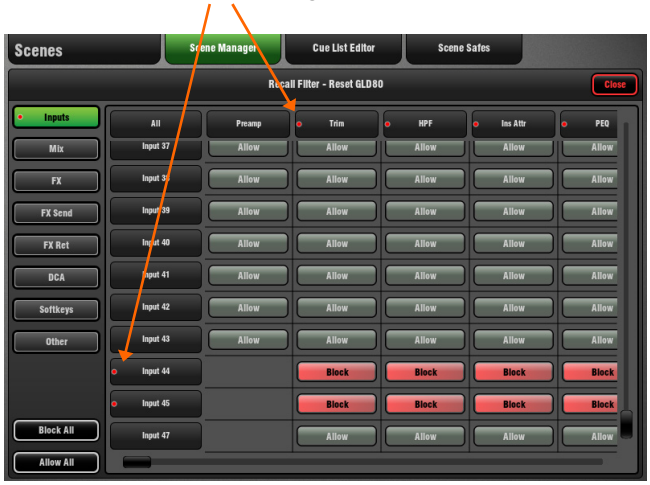
- Settings for each of the 10 SoftKeys

Other parameters that can be filtered:

- Patchbay – Input source, Inserts, Outputs
- I/O Port – Option card settings
- Output Polarity
- Talkback HPF
- Ganging
- dSNAKE Monitor – Aviom/ME mode
- Global Direct Out
- Strip Assigns – Left and/or Right banks

Note Blocking all items in the Recall Filter will prevent any GLD parameters being overwritten when the Scene is recalled.

A red dot lights in a screen tab when one or more items have been blocked in that page.



7.3 Cue List Editor page

A Cue List is a custom list of Scenes selected from the All Scenes list.

You can drag and drop Scenes to create the Cue List. Scenes can be placed in any order and repeated any number of times in the list, or deleted from the list. Cue Lists can be named, saved, recalled and deleted.

You can choose to show either the All Scenes or the Cue List window in the **Scene Manager** page.

The current and saved Cue Lists are stored in Show memories.

To add Scenes to the Cue List - Drag and drop Scenes from the All Scenes List into the Current Cue List window on the right. Insert a Scene by dragging it between others in the list.

To remove Scenes from the Cue List - Touch the trash can icon to the right of the Scene name. This removes it from the Cue List but not the All Scenes list.

To clear all Scenes from the Cue List - Touch the Clear Current button. Use the Clear List? popup to confirm.

To save a Cue List – Touch the Save button. Type a name into the screen keypad and touch Apply.

To Load a saved Cue List – Touch the Load button. A list of currently saved Cue Lists appears. Touch to select an item and then touch the Load button. The Cue List will load immediately.

To delete a saved Cue List – Touch the Manage button to open the list of saved Cue Lists. Touch to select an item and then touch the Delete button. The Cue List will be deleted immediately.

Note Saved Cue Lists cannot be renamed. To rename a list load it then save it as a new list with the new name. Delete the list with the old name.

7.4 Scene Safes page

Scene Safe is similar to the Recall Filter but is global affecting recall from all Scenes.

Use the tabs on the left of the screen to view the different parameter groups. Swipe your finger up/down or left/right to navigate through the list.

To make a channel or master fully Recall Safe - Either:

1. Surface keys - Hold the Safe key and press the Mix key for the channel you wish to make Safe, or

2. Screen - Touch the channel number label on the left of this screen to turn on all its parameters Safes.

When a channel or master is fully Safe the 'SAFE' icon will appear at the top if its strip LCD display.

Note The 'SAFE' icon will only appear if all the channel parameters are Safe.

Note Making a channel Safe in this way overwrites previous settings in the Scene Safes page.

To make selected parameters Recall Safe

1 - Single items - Touch to toggle a button.

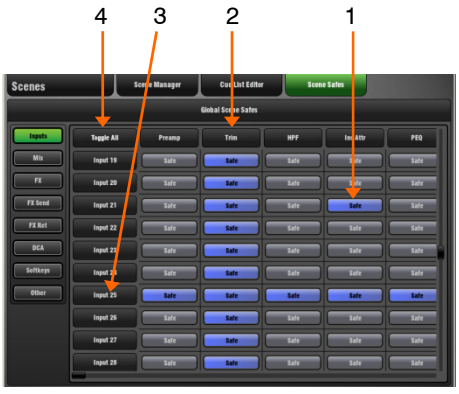
2 - One parameter for all channels - Touch label at top.

3 - All parameters for one channel - Touch label on left.

4 - All items in the current tab - Touch Toggle All.

Safes are applied immediately. No confirmation is needed.

Safes settings are stored in Show memories.



Scene Safes parameters

For Inputs, FX Returns, FX mix, Grp, Aux, Main Mtx:

- Preamp Gain, Pad, and 48V
- Trim and Polarity
- HPF
- Insert In/Out and operating level
- PEQ
- GEQ
- Dynamics – Gate, Compressor and Limiter
- Channel Fader
- Channel Mute
- Channel Pan
- Routing assignments, Sends and Pan
- Delay
- Direct Out
- DCA assignments
- Name and Colour

Parameters that can be made Safe for DCA Groups:

- Channel assignments
- Master Fader
- Master Mute
- Name and Colour

FX parameters:

- Parameters for each of the 8FX units

SoftKeys:

- Settings for each of the 10 SoftKeys

Other parameters that can be made Safe:

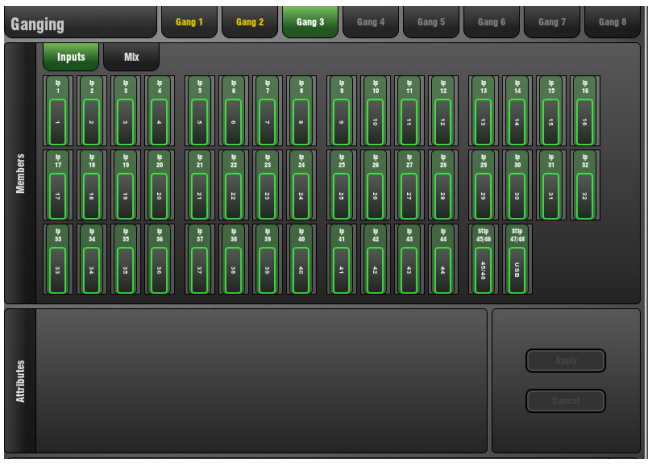
- Patchbay – Input source, Inserts, Outputs
- I/O Port – Option card settings
- Output Polarity
- Talkback HPF
- Ganging
- dSNAKE Monitor – Aviom/ME mode
- Global Direct Out
- Strip Assigns – Left and/or Right banks

Note From V1.1 onwards making all items Safe will prevent any GLD parameters being overwritten when any Scene is recalled.

A blue dot lights in a screen tab when one or more items have been made safe within that page.

8. Ganging Screen

Use this screen to assign up to 8 Gangs.



A **Gang** links all or a selection of processing and routing parameters for two or more channels or mixes of the same type. For example, gang two mono input channels to use with a stereo keyboard. The channels or mixes in a Gang are known as 'Members'. The parameters are known as 'Attributes'.

- A Gang must have channels of the same type
- A channel or mix can only belong to one Gang
- Ganging does not link the Preamps or Trim
- Ganging provides absolute, not relative control

To assign a Gang - Touch one of the 8 Gang tabs at the top of the screen. This opens the view for that Gang.

A Gang with channels already assigned highlights orange. Select either the Inputs or Mix tab. Touch the channels you wish to gang or ungang. Channels of a type different to those currently in a Gang disappear from the screen. Touch the parameters you wish to link in the Attributes pane. Adding the Routing attribute links the assignments and sends from the ganged channels.

Touch Apply or Cancel to accept or delete the changes.

Using Gangs

Use the Gangs to suit the way you prefer to mix. Some examples are:

Gang two mono channels to use with a stereo source such as keyboard or a feed from a DJ. In this case you would gang all processing but not the Pan. You could leave the Fader and Mute unganged if you want independent control of L and R level, or gang those too if you want to hide one side on another layer and work with just one fader strip in view. But remember to first adjust the Gain and Trim separately for each side.

Gang the compressor across several channels such as backing singers. This provides quick control without the need to use up audio groups.

Gang two stereo Matrix GEQ only for combined control of the Graphic EQ when working with two pairs of LR speakers fed via the matrix in a distributed FOH system.

Gang several mono Aux mixes PEQ only for simultaneous EQ of wedge monitors on stage. You could use this to 'top and tail' the HF and LF response of all monitor wedges or compensate for the sonic characteristics of the same type of speaker.

9. Setup Screen – Audio

9.1 PAFL Setup page

Set your preferences for the PAFL monitoring system.

The strip PAFL key operates in the following way:

- Mix PAFL overrides Mains in the monitor
- Input PAFL overrides Mix PAFL
- Releasing Mix PAFL restores previous Input PAFL
- Pressing Mix PAFL clears any Input PAFL

Input/Output AFL – 'PAFL' means PFL (Pre-fader listen) and AFL (after-fader listen). Choose to select either PFL or AFL separately for Input channels and Output (mix) masters when the strip PAFL keys are pressed. Default is:

- Input PFL (Check signal before you raise the fader)
- Output AFL (Check signal appearing at the output)

PFL Trim - Lets you attenuate the PFL signal by up to 24dB relative to the AFL signal. This is useful to avoid loud PFL levels when your mix output levels are low, for example driving sensitive amplifiers feeding stage monitor speakers.

Delay - Up to 170mS PAFL delay can be set in situations where the mixing position is located some distance from the stage to time align what you hear in the headphones with the acoustic sound from the stage.

Additive Mode – Sums PAFL selections when turned On. Auto-cancel Mode when turned Off so that pressing a PAFL key cancels the previous selection.

IEM Mix to Headphones – Phones output follows Engineer's IEM monitor strip (for in-ear monitor mixing).

Mix follows Mix PAFL – Pressing a Mix master strip PAFL key selects Mix for that master.

Mix follows Input PAFL – Pressing an Input channel strip PAFL key selects Mix for that channel.

Sel follows PAFL – Pressing any PAFL key selects Sel (processing) for that channel or master.

Disable PFL on Sel - Disables the interruption of the PAFL audio signal while pressing a channel processing block Sel key to open its screen view. Turn this option Off if you want to listen to (PFL) the audio signal at that point in the channel path while pressing and holding the processing block Sel key.

These options provide great flexibility to suit different mixing applications. For example, choosing Sel and Mix to follow master PAFL can make mixing monitors very quick.

Ext Input to PAFL Source – Use the drop-down menu to select and assign an external signal to the PAFL monitor, for example a preamp used as a reverse talkback from FOH while monitor mixing. This signal will appear in the monitor engineer's PAFL monitor and is not affected by their listen Wedge or IEM strip fader position.

Mains to PAFL – Sets how much of the main LR signal goes to the PAFL monitor when no channel or master PAFL is active. Typically -Inf (off) or 0dB (on).

SETUP pull-up window

Choose the PAFL Delay units.

9.2 Talkback Setup page

Talkback lets the engineer talk to performers on stage through their monitors, or make announcements to the audience through the FOH system.

Use this page to assign Talkback to one or more of the Mix outputs. Touch a mix button to assign it On or Off.

SOURCE pull-up window

Use the pull-up to choose the Talkback source, set its options, adjust its gain and set its High Pass Filter.

Enable Latching – The default Talk switch operation is momentary (press and hold while talking). Turn this option on for latching operation (press to turn Talk on, press again to turn Talk off). Latched operation is useful when you are using a switched microphone for talkback.

Enable Dim PAFL - Select this option if you want the currently selected PAFL signal to be dimmed (attenuated) in the engineer's monitor while you are talking. This can prevent feedback from the talkback mic signal heard in the listen wedge next to you while mixing monitors on stage.

Note It is usual to turn Enable PAFL Dim off if you are using Latching Talk switch operation. Leaving it selected while using latched Talk with a switched microphone may result in the PAFL signal being permanently dimmed.

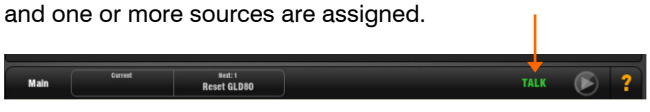
Source Select - Open the drop-down menu to select Talkback source:

- Unassigned
- Any Input socket (Typically GLD Mic input 44)
- Any I/O Port input
- A Rack FX
- USB playback

Socket Preamp - Set the source Gain/Pad and phantom power, or Trim if the source is not a preamp. You can also make the source Scene recall Safe so that it is not changed when Scenes are recalled.

HPF – Set the High Pass Filter to filter out low frequencies, for example to reduce microphone handling noise.

Talk - Press the surface Talk switch to talk to the assigned outputs. The switch green indicator lights while it is active. The lower toolbar displays 'Talk' when talkback is active and one or more sources are assigned.

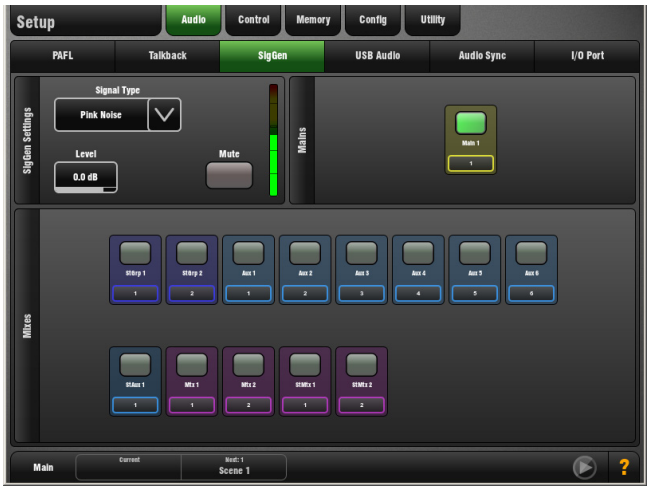


Talkback Trim – Use the Trim control to adjust the talkback level once the preamp gain has been set. This provides +/- 24dB range Start with 0dB setting.

Note The Signal Generator is disabled while Talk is active.

9.3 SigGen page

The Signal Generator (SigGen) is a useful tool providing a steady test signal to help you align and test a live sound system. Use this page to set up the Signal Generator and route it to one or more mix outputs.



The SigGen routes through the mix master processing, therefore will be affected by the mix EQ and compressor.

Note The Signal Generator is disabled while Talkback is active (Talk key turned on).

To assign the SigGen to mix outputs - Touch a mix button to toggle the assignment on or off.

Level - The generator level can be set from fully off to full scale +18dB. Touch the Mute button to turn the signal off.

Note To avoid sudden noise through accidental routing we recommend you turn the SigGen Level down when you are finished using it.

Signal Type - There are 4 types of signal available:

Sine - A pure tone. Set the frequency using the Frequency box. This can be swept across the full audio spectrum from 20Hz to 20kHz. Often used for equipment gain matching.

White Noise - A signal containing all audio frequencies with equal energy per Hz, a linear curve that sounds lacking in bass to the human ear. Not often used in live sound.

Pink Noise - A signal containing all audio frequencies with equal energy per octave, a logarithmic curve that matches the way the human ear responds. Therefore this is a good source for testing speakers and room response.

Band Pass Noise - Band filtered pink noise centred around the frequency set using the Frequency control.

Using Pink Noise to test the PA

Route Pink Noise to test your stage monitors before sound check to make sure all the HF and LF drivers are working and their level and frequency response is well matched. You can also check if two speakers or their cables are reversed polarity as you will hear an uncomfortable phasing effect as you walk between them. Pink noise is also used as the reference source when analysing speaker response using an RTA.

9.4 USB Audio page

Set up and manage stereo recording and playback to a USB key. Tracks and space available are shown.

Playing back a stereo track from USB key:

Playback format - The GLD can play back stereo WAV or FLAC files at 44.1 or 48kHz.

To assign USB playback to an Input Channel – Touch the Assign button to open the **I/O** / **Surface** screen to patch USB Playback to input channels. You can also do this using the channel **Preamp** screen. USB playback is assigned to Ch 47/48 in the factory Template Shows.

To select a track to play back - Plug in a USB key with the audio files you wish to play back. Set the **OPTIONS** in the pull-up. Scroll through the list and touch to highlight a track. Information on the track including file path, size and date is displayed.

To start the playback - Use the transport buttons to Play, Pause, Stop and select Next or Previous track. A blue arrow in the lower toolbar in all screens shows a track is playing.

OPTIONS pull-up window

Open the pull-up to set playback options:

Play Next Track - Single or continuous playback.

Repeat Current Track - Continuously play a single track,

Show All Files – List all audio files in all directories found on the USB key,

Show Playback Files – List audio files found in the USBPlayback sub directory only.

Show Recorded Files –List audio files found in the USBRecord sub directory only.

Recording a stereo track to USB key:

Recording format – GLD records WAV files at 48kHz.

Recording time – Memory required = 188KB/sec.

Therefore allow:

- 11.5MB per minute
- 700MB per hour

Note Maximum recording time for one track = 3 hours.

To assign a recording source – Touch the Assign button to open the **I/O** / **Surface** screen to patch the source for the USB recording. For example, record the main mix, a stereo group, aux or matrix, or two independent mono signals. USB recording is fed from Stereo Matrix 1in the factory Template Shows.

Check recording level – If you are using a source other than the Main mix, for example a stereo Matrix, then check that the send level to the source and its master fader are turned up. Check that there is signal displayed on the source meter in this screen.

To start the recording - Touch the Record button. This opens the keypad to name the recording. The default date/time name can be overwritten using the keypad.

Touch Apply to start the recording. The elapsed time and remaining time available on the USB key is shown. A red circle in the status bar in all screens indicates that the GLD is recording to the key.

To stop the recording – Touch the Record button again.

Note You can access the USB Audio page by touching the status bar Play or Record icon while in any screen.

Recording Name – A default date/time name is displayed when you open the keypad to start the recording. Touch Apply to accept this name or enter a different name.

Default name example: 15_Apr_18.23.26.wav

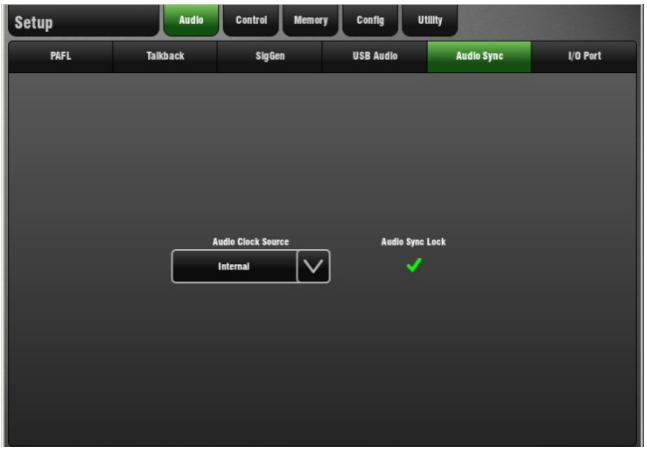
USB Folders

The AllenHeathGLD / USBRecord directory is automatically created on your USB key when you start a recording.

The AllenHeathGLD / USBPlayback directory is automatically created when you select the Show Playback Files pull-up option. Or you can create it manually using your computer and add the files you wish to play back.

9.5 Audio Sync Setup page

Use the Audio Sync Setup page to choose the Audio Clock Source for the GLD system.



Open the drop-down menu:

Internal - The GLD uses its internal audio clock. Use this setting when you are working with local Mic/Line audio sources connected via the GLD and its AudioRacks.

Slave Option Card – The GLD uses an external audio clock sync from a digital audio network card fitted to the I/O Port. Use this setting when you are working with remote audio received via the option card.

FOH/Monitor split application

Two consoles can be linked using the I/O Port as a digital mic split between them. For example, ACE option cards fitted in both to link the mic inputs over a Cat5 cable.

Monitor console – In this example the Monitor console is the 'Master' and has control of the mic preamps in AudioRacks connected to it. This console is set for Internal audio clock source.

FOH console – This console is the 'Slave' getting its mic inputs from the Monitor console via the ACE digital network. It needs to sync its audio to the Monitor console. Therefore its audio clock source is set for Slave Option Card.

9.6 I/O Port Setup page

Use the I/O Port Setup page to set options associated with the audio card currently fitted to the I/O Port.

ACE

Redundant Link On – Uses Port 2 for redundant cable backup

Redundant Link Off – Choose either all inputs from Port 1 or split inputs with 1-32 from Port 1 and 33-64 from Port 2.

MADI

Redundant Link On – Uses BNC In and Out 2 for redundant cable backup

Redundant Link Off – Select inputs in blocks of 8 from either BNC In 1 or BNC In 2.

Aux BNC mode – Choose In1 Thru, Out1 Mirror or Word Clock Out. (Word Clock In is not available for Aux BNC mode).

Dante

No options

EtherSound

No options

MMO

No options

10. Setup Screen – Control

10.1 Strip Assign Setup page

Any combination of inputs and masters can be assigned to the 4 Layers of the Fader Banks. You can 'design' your own mixing layout to suit the way you want to work.

To assign GLD fader strips, open the Strip Assign page and use your finger to drag and drop channels into the four strip Layers for each of the two fader Banks.

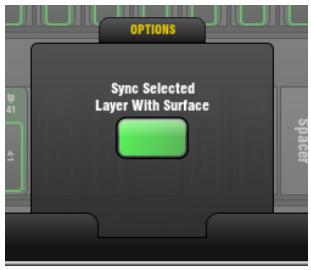
The factory Template Shows provide a classic layout with inputs on the left and masters on the right to give you a familiar layout as a starting point. You can edit this and store it as a Scene or your own User Show.

To assign strips - Current assignments are shown in the Bank tabs at the bottom of the screen, with Layer A to D tabs on the right. The GLD-80 has two Banks while the GLD-112 has three. Use the tabs in the left of the screen to open the type of channel you want to assign to the strips. Touch a channel and **drag and drop** it on top of a strip position to overwrite. You can also drag channels out of the Banks to leave a blank space.

Turn on **Block Select** to select a range of channels to drag into the Bank. If you drop more channels than there are strips available into a Layer then they will wrap into the next layer overwriting channels currently assigned there. Changes are made immediately.

Select different channel types using the tabs on the left:

OPTIONS pull-up window



Use the pull-up to choose to sync the Layer shown on the screen with the currently selected surface Layer. Select the Bank to work with. The screen will follow the Layer currently selected on the surface for that Bank.

Note Assigning strips does not change the number of channels available. It simply links a fader strip to control the channel assigned to it. The same channel could be assigned to multiple positions across both fader banks.

10.2 Name & Colour Setup page

The Name & Colour Setup page lets you reset the name or change the colour of a block of channels.

To Colour a block of channels - Select the channel type from the Type drop-down menu. Select All or touch the Start and End buttons to set the range of channels. Touch a colour button. This will change the colour of the block.

To Reset a block of channel Colours – This will reset colours to factory default. Select the channel type from the Type drop-down menu. Select All or touch the Start and End buttons to set the range of channels. Touch the Reset button and confirm using the popup window. The popup will inform you of the reset colour.

To Name and Colour individual channels – While it can be done using this page it is quicker to press the related strip Sel key and use the Keypad button available at the top of the individual channel Processing screen.

To Reset a block of channel Names – This will reset the names to their default channel number. Select the channel type from the Type drop-down menu. Select All or touch the Start and End buttons to set the range of channels. Touch the Reset button and confirm using the popup window.

10.3 SoftKeys Setup page

GLD provides user assignable 'SoftKeys' on the right of the mixer. The GLD-80 has 10 while the GLD-112 has 14 keys.

There are many different functions that can be assigned to these keys.

To assign a SoftKey -Touch one of the SoftKey buttons on the right of the screen to highlight it. Open the Function drop-down menu and select the function to assign. Use the Channel Type menu and Channel Number box to select the channel required. Touch Apply to accept, or Cancel to keep the current setting.

SoftKey assignments can be stored and recalled with Scenes. We recommend you set these before you start storing your Scenes.

Note To prevent Scene recall overwriting your SoftKey settings you can make one, a selection or all Safe using the **Scenes** / **Scene Safes** screen **SoftKeys** tab.

The SoftKeys are made Safe in the default factory Template Shows.

Assign SoftKeys as:

- Unused – No function
- Mute - For example, using DCAs as Mute Groups
- Sel – Quick access to processing for a channel
- Mix – Quick access to a specific Mix
- PAFL – Quick access to a selected PAFL
- PAFL Clear – Turns off all currently active PAFL keys
- Sel, Mix , PAFL Scene – Combination on single key
- Scene Recall – To instantly recall a selected Scene
- Scene Next/Prev/Go – Scene recall keys
- Tap Tempo - Assign to any of the 8 FX L or R tap
- Custom MIDI - Transmit a custom MIDI message string
- Talkback Assign - Talkback to different outputs
- Level Up – Tap to increase level for faders
- Level Down – Tap to decrease level for faders
- Send Level Up – Tap to increase level for Aux sends
- Send Level Down – Tap to decrease level for Aux sends

Notes on using SoftKeys for Scene recall:

SoftKey Scene Recall – Individual SoftKeys can be assigned to recall specific Scenes. Recall is instant. No confirmation popup appears even if the option is set.

To recall a sequence of Scenes using a single SoftKey you could include the SoftKey in the Scene recall and assign it to recall a different Scene within each Scene it recalls.

Alternatively, to prevent Scene recall overwriting your SoftKey Scene Recall settings you could make these keys Safe in the **Scene Safes** page.

SoftKey Next/Prev/Go Recall – Assign SoftKeys as:

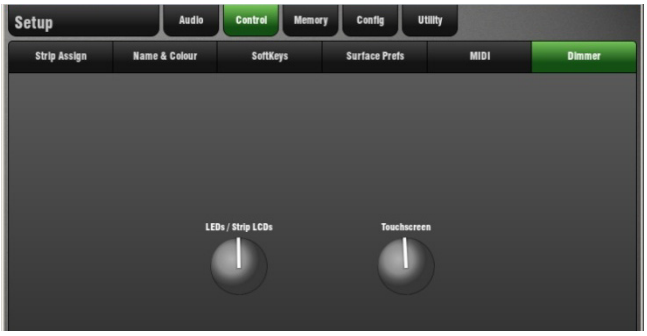
- Go – Instantly recall the highlighted Scene
- Next – Step to the next Scene in the list ready to recall
- Prev – Step back to the previous Scene in the list

An **Auto-Increment option** can be set so that pressing Go recalls the highlighted Scene and then steps to the next in the list ready to recall when Go is pressed again.

To avoid the need to open the Scene Manager screen refer to the **Current**/**Next status bar** information when working with the Go key. You can also set up a **Cue List** with the sequence of Scenes you wish to recall.

10.4 Dimmer page

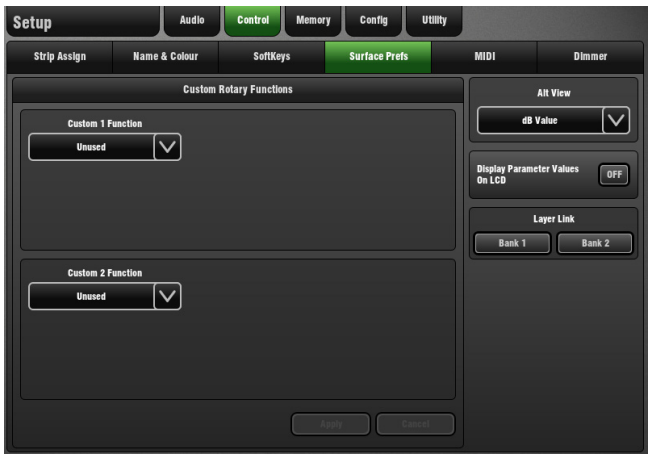
Use this page to separately adjust the brightness of the touch screen and the Leds/LCD displays.



Pressing the **Setup** key for 2 seconds opens the Dimmer screen and sets the touch screen brightness to maximum.

10.5 Surface Preferences Setup page

Use the Surface Prefs page to choose the function of the fader strip Custom Rotary and the Alt View key, and to link fader banks.



Strip Rotary control

Each GLD surface strip has a rotary control above the fader for instant access to important controls while mixing.

Custom Rotary Functions - The fader strip Rotary control function is selected using 4 keys between the GLD Fader Banks. These are:

- Gain – Preamp Gain control
- Pan – Main LR mix Pan control
- Custom 1 – User assigned
- Custom 2 – User assigned

To assign Custom Rotary functions – Use the drop-down menu to select the function:

- Unused – Rotary not assigned
- Direct Out – Input channel Direct Output level
- Send Level – Aux or FX sends
- HPF Frequency
- Compressor Threshold

Touch Apply to accept or Cancel to discard the change.

To link Fader Banks – Touch the Layer Link buttons to link or unlink the layers across the fader banks. When two banks are linked, selecting a layer key on either bank will select that layer across both fader banks.

The Surface Preferences are remembered on power down and are stored in Show memories. They are not stored in Scene memories.

Alt View key

This key situated between the GLD surface Fader Banks provides an alternative information display on the fader strip LCD while it is held.

To choose an Alt View option – Open the drop-down menu and touch an item to select it.

Alt View display options – The strip LCD normally displays the channel name. Pressing and holding Alt View will temporarily replace the name with one of the following options:

- DSP Channel – Processing channel number
- dB Value – Fader position dB value
- Socket ID – Source socket number

Strip LCD display Socket ID codes (nn = number):

- S-nn = Physical socket
- P-nn = I/O Port
- FX-n = Rack FX
- USB = USB key playback
- NotAs = Not assigned, or SigGen assigned

10.6 MIDI Setup page

Use the MIDI Setup page to assign the MIDI channel number and operate the MIDI Transport controls.

To change the MIDI Channel – Touch the MIDI Channel box. Turn the Rotary to select the required channel number. Touch Apply to accept or Cancel to leave unchanged.

MIDI Transport controls – Touch these buttons to send out the related MIDI message on the GLD MIDI port.

The following functions can be controlled using MIDI. These can also be controlled with similar messages using TCP/IP using the GLD Network port.

• Fader levels	NRPN	(Input, Master, FX, DCA)
• Mutes	Note On	(Input, Master, FX, DCA)
• Send levels	NRPN	(Aux and FX sends)
• DCA assign	NRPN	
• Input to Main On	NRPN	
• Preamp Gain	Pitchbend	
• Preamp Pad, 48V	Sysex	
• Name & Colour	Sysex	
• Scene Recall	Program Change	
• MIDI transport	MIDI Machine Control	
• Mix Select	Polyphonic Key Pressure	

Refer to www.allen-heath.com for the MIDI protocol.

11. Setup Screen – Memory

11.1 Show Manager page

Use this page to store, recall and transfer Show memories.

A **Show** memory stores the complete GLD setup. This includes:

- Mix configuration
- User preferences
- All Scene memories
- All Libraries

User Profiles are not stored in Show memories.

Shows are stored in the GLD surface and can be transferred between GLD systems or archived on computer via USB key. User Shows can be overwritten, renamed or deleted.

Show List - The left hand window lists Shows stored in the GLD, the right hand window lists Shows stored on the USB key if one is plugged in.

Template Shows - These are Factory Shows that provide a quick starting point by giving you a familiar layout and classic mix architecture. Several Templates are available for popular live mixing applications, for example FOH and Monitor. Template Shows cannot be edited or deleted.

User Shows - These are user defined Shows that store and recall your mix and settings. You could start by recalling a Template show, edit the way you want to work, and then save this as a User Show to give you your own 'template' for future recall. You can also archive settings for a particular band or performance to use again on a different GLD system.

To Recall a Show - Touch to highlight the Show you want to recall. Touch the Recall button. Touch Yes in the popup to confirm.

Note Recalling a show overwrites all system settings and also all Scenes and can change your mix architecture and patching. If you want to keep your current settings to use again in the future first archive them as a User Show.

Note A Show can take a while to load. It is not intended for instant recall of band settings, theatre cues and so on. Use Scenes for those applications instead.

Note GLD Show files are not compatible with iLive.

Note GLD Shows are cleared during a power up System Reset. Shows are not cleared during a firmware update.

To Store a new Show - Touch the Store Show button. Type in a name using the keypad. Touch Apply. Touch OK in the popup to return to the Show list.

To overwrite an existing Show - Highlight the User Show you want to update and touch the Overwrite button. Touch Yes in the popup. Touch OK to return to the list.

To copy to/from a USB key - GLD stores its information in directories it creates in the root directory of the USB key. Highlight a Show in the GLD Shows list and touch Copy to USB to copy it to the key. To copy from USB to the GLD highlight a Show in the USB list and touch Copy to GLD. Wait a few moments to make sure the copy is complete before removing the key.

You do not need to 'dismount' the USB drive before removing it.

11.2 Template Shows as a starting point

The GLD has a fully configurable audio architecture, control layout and socket patching letting you customise the way you work. It would be a daunting task for the new user if we gave them a 'blank canvas' to start from scratch. Instead we have provided a set of 'Template' Show memories which give you a choice of classic console format to load in as a quick starting point. These present the familiar architecture and logical layout of well equipped analogue consoles.

Once you are comfortable working with GLD you can make changes to your set up and save these as your own 'User' Shows.

A default show is already loaded when the GLD is shipped from the factory. This is Template1 LR.

LR Template Show settings are shown below. Note:

- SoftKey assignments are Scene Safe
- SoftKeys 1-8 = DCA mute 1-8
- SoftKey 9 = PAFL Clear All
- SoftKey 10 = FX4 tap tempo (FOH only)
- SoftKey 11-14 = Unassigned
- Scene Confirmation = On
- Global Direct Out = post-delay, pre-fade, post-mute
- Monitor Port = ME-1 mode
- I/O Port out = input socket 1-48
- PEQ = 20-20kHz, Curve Fill = On
- Auxes are post-PEQ, pre-fade (monitors)
- FX are post-fade (effects)
- Talkback = Momentary, Dim = Off
- USB playback assigned to CH47/48
- USB recording from LR via stereo Matrix1
- Scene 1 and 499 (backup) = ' Reset GLD-80 '
- Scene 2 and 500 (backup) = ' Reset GLD-112 '

The Template Show 'Board Reset' Scene

Each Template Show provides two 'Reset' scenes in position 1 and 2. These reset the GLD80 or GLD112 mixer settings to the starting point default for the loaded Template Show.

The Board Reset Scenes are duplicated in positions 499 and 500 at the end of the list as a backup.

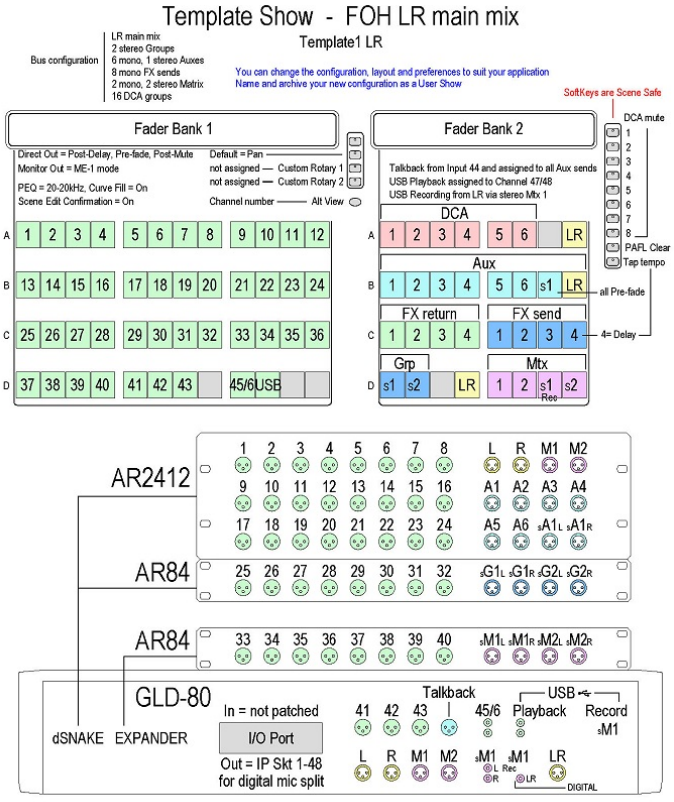
Use this Scene to instantly reset parameters without affecting the mix configuration, user preferences or the other Scenes. You can edit its **Recall Filter** to protect parameters you do not wish to reset. For example, you could set the filter to protect the patchbay and master strip assignments in a festival situation.

Note You can also set **Scene Safes** to protect selected parameters for all Scenes, for example to remove the SoftKeys from Scene recall.

When creating your own User Show from a Template Show you can choose to overwrite the Scene 1 and 2 contents with your preferred settings, rename them, write in a description, set their Recall Filters to reset selected parameters only, or simply delete them. You can still access the default reset using Scene 499 or 500 if needed.

The factory default Template Show

The diagram below shows the layout for the GLD-80 mixer. The larger GLD-112 has its middle fader bank assigned with input channels.



11.3 Library Manager page

Use this page to edit and transfer User and USB Libraries.

Library memories include:

- Channel Processing (Preamp option)
- Mix Processing
- PEQ
- GEQ
- Gate
- Compressor
- FX parameters

Access the libraries at the bottom right of the Channel or Mix Overview page, or the bottom left of each processing page.

Factory Libraries - A few built-in Libraries that can provide a starting point for creating your own user libraries. These cannot be deleted or transferred via USB key.

User Libraries - Name and store your often used parameter settings as User Libraries. Overwrite existing Libraries with new settings.

The **Library Manager page** lets you rename, delete and transfer User Libraries to/from USB key.

Library Lists – Libraries stored in the GLD are shown in the left window, those found on the USB key in the right window.

To Delete a Library – Touch to select a Library item in the list. Touch the Delete button. Confirm using the popup.

To Rename a Library - Touch to select a Library item in the list. Touch the Rename button to open the screen keypad. Type in a name and touch Apply to accept or Cancel to exit without changing the name.

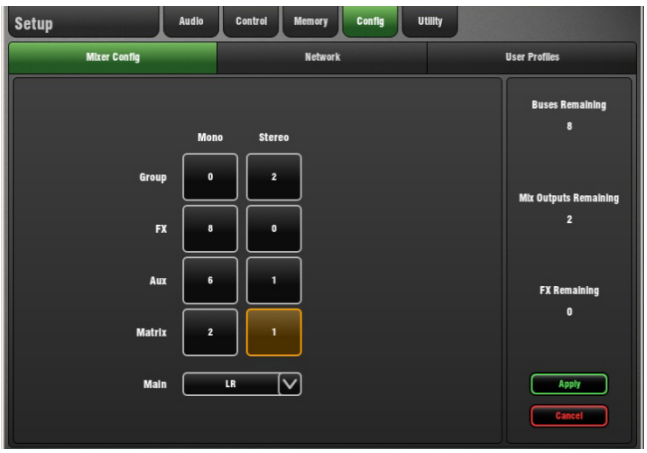
USB transfer - View and recall User Libraries directly from your USB key. There is no need to transfer these to the GLD first. You can overwrite Libraries on the USB key with new settings, or store them to the GLD as new items.

Touch the Copy to GLD button or Copy to USB buttons to transfer Libraries.

12. Setup Screen – Config

12.1 Mixer Configuration Setup page

Use the Config page if you need to re-configure the architecture of the 32 Mix and FX buses and the 20 Mix Outputs available from the GLD system.



Choose any combination of:

- Mono or stereo Groups
- Mono or stereo FX sends
- Mono or stereo Auxes
- Mono or stereo Matrix
- Main mix type

Main Mix types - Choose one of 5 types:

None - No main mix, for example dedicated monitor mixing with a large number of Aux mixes (up to 20).

LR - Standard stereo main mix with single master fader. A Balance control is provided using the strip rotary to adjust the relative Left and Right level.

LR+Msum - A stereo main mix with additional output which is the mono sum of the pre-fade, pre-processed LR mix. For example to feed a mono delay speaker or zone.

LR+M - A 3-way main mix with independent stereo LR and mono M buses. Channels can be separately assigned to any combination of LR and M. Typical application for M is main centre speaker, mono PA or bus-fed sub bass.

LCR – A 3-way main mix with true LCR panning. Each channel can be panned from left, through centre to right. At mid pan, full signal is fed to M and none L and R. Stereo channels feed the LR mix only.

The window on the right displays the number of buses and mix outputs remaining and warns if you exceed the maximum.

Touch Apply to accept the changes or Cancel without changing the configuration.

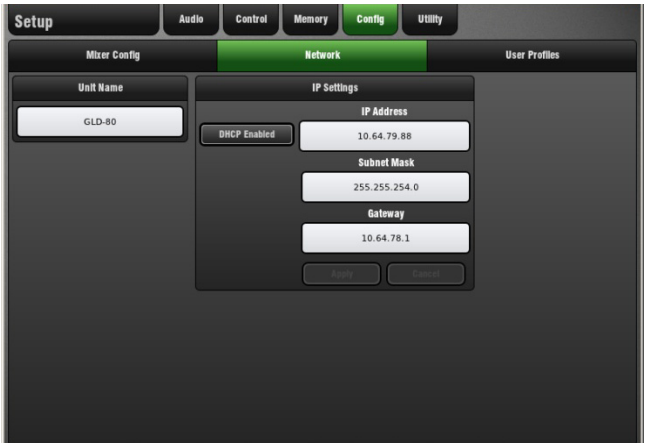
GLD automatically stores the current settings before changing the configuration and recalls them after it has completed. You may notice the faders move briefly during this process.

Note In most cases it should not be necessary to change the mix configuration as the Template Shows provide enough mixes to satisfy most applications.

Note Mix configuration re-assigns the DSP architecture and resets mix parameters. The changes if needed should be done before, not during a show.

12.2 Network Setup page

Use the Network Setup page to configure the IP Address and Unit Name to identify the GLD on the control network. The network IP address can be set manually or for DHCP.



Some functions of the GLD can be controlled using TCP/IP messages via the Network port. The GLD TCP/IP protocol document can be downloaded from www.allen-heath.com

Unit Name – a name with up to 16 characters can be set to identify the GLD on the network.

Static address – The IP address can be manually set using this screen. This is the default and is typical for stand-alone operation. If you are working with a wireless access point (Wi-Fi router) for remote control make sure the GLD and router have unique but compatible addresses.

Default GLD static address:

IP Address – 192.168.1 50

Subnet Mask – 255.255.255.0

Gateway – 192.168.1.254

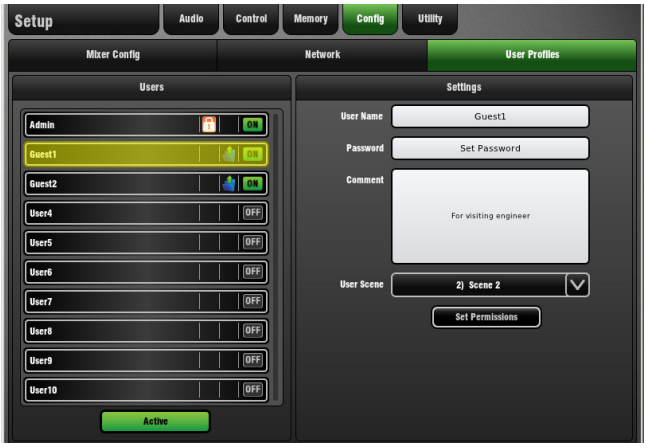
DHCP – IP address allocated to the GLD by a network server. Only set this if the GLD is connected to a network or device that provides DHCP addresses.

Note If the GLD is set for DHCP operation and is powered up while it is not connected to a DHCP server/network then it can take several minutes for the system to boot while it waits for an address. After a while it will time out and boot with a default address.

If the GLD takes a long time to boot up then check if the IP address is set for DHCP. Apply a static address.

12.3 User Profiles Setup page

Up to 10 User Profiles including an 'Administrator' can be set to restrict operator access and protect selected functions.



The User Profile Setup page is available when the Admin user is logged in.

The **Admin** user (Administrator) has access to all functions and can set permissions and allocate passwords if required for the other users.

Up to 9 other Users may be set up, for example volunteer operators in houses of worship, guest engineers visiting venues, or clients hiring equipment from rental companies.

The password, if one is set, is required when the user logs in, changes user or locks the GLD surface.

User List – A list of 10 Users is shown with icons for each to indicate if a Password is set, a User Scene is set, and if the user is Active (to appear in the Login screen).

To select a User Profile to edit - Touch a User button in the list. The Settings window displays its information.

To Name a User – Touch the User Name box to open the screen keypad to enter a name with up to 16 characters.

To attach a Description – Touch the Comment box to open the screen keypad to enter a description or notes that will appear in the User Login page.

To set a Password – Touch the Password box to enter a Password with up to 16 characters. Touch Apply to enter. Type it in again to confirm.

Note Keep a note of all Password in a safe place. Resetting passwords requires disassembly of the GLD.

To set a User Scene - You can assign one of the GLD Scenes to recall automatically when the user logs in as a different user. This will overwrite console settings according to the settings of its Scene Recall Filter.

Touch the User Scene box to open a list of all GLD Scenes. Select 'No Scene' if you do not need a User Scene.

A User Scene can ensure that the GLD is restored to a known starting point for the user when they log in after a different user has been operating the system.

Note The User Scene only recalls when the user is changed. It does not recall when the same user logs in or the system is powered up without changing user.

To set Permissions - Touch the Set Permissions button to open the Permissions popup.

The Admin user can enable or disable access to GLD setup and mixing functions for guest users and operators. Each of the 9 other Users can have their own set of Permissions applied.

Note User Profiles are stored in the GLD surface. They are not stored in Show memories.

To set User Permissions – Use the tabs across the top of the window to view and set different groups of permissions. Select an item in the list and touch the Enabled button to disable it (turns Off in the list). Touch again to enable it (turns On).

The window on the right provides a description of the functions included in the currently selected item.

To Enable or Disable All in the tab – Use the buttons to quickly turn all On or Off in the list. This affects only the currently open tab.

Touch Apply to accept the changes or Cancel to discard them before exiting the tab.

To activate a User – Touch the Active button below the User List to activate (turn On) any user profiles you want to appear in the Login screen. Inactive users will not appear in the Login screen.

To log in as a different User - You can change user at any time by going to the **Home** / **Users** screen. You can also change user at the Login screen when powering up the GLD if a password has been set.

If a password has been set then you are also prompted to enter it when you unlock the surface.

Permissions available

Setup:

- Utility – date/Time, Firmware Update
- Configuration – Bus Config, Network setup
- Control Setup – Strip assign, SoftKeys, Custom Rotaries, Alt View, MIDI Setup, Gain/Trim on Surface, Custom Meter setup
- Rotary Function keys – Gain/Pan/Custom key access
- Sel keys
- Mix keys
- Audio Settings – PAFL setup, Talkback setup, SigGen, 20-20k EQ option, Global Direct Out source, Audio Sync

Memories:

- Show Manager – Store, Recall, management
- Library Manager – Store, management
- Libraries – Store/Recall from Library pages
- Scene Edit – Name, Description, Recall Filter edit, Cue List edit, Delete/Copy/Paste
- Scene Store – From screen
- Scene Recall – From screen

Routing:

- Input Patchbay – Channel Source
- Output and FX Patchbay – Sockets, I/O Port, Monitor Port, Inserts, FX patching
- Channel Routing – Input/Mix On and Pre/Post assign, Aux source setup

Inputs/Groups:

- Name and Colour
- Preamp – Gain, Pad, 48V
- EQ – HPF, PEQ, GEQ
- Dynamics – Gate, Compressor
- Delay
- Ganging – Inputs and Groups

Aux/Main/Matrix Mix:

- Name and Colour
- Ext Input – Preamp settings
- PEQ
- GEQ
- Compressor
- Delay
- Ganging – Aux, Main and Matrix

FX:

- Name and Colour – Send and Return
- FX Parameters – Screen access

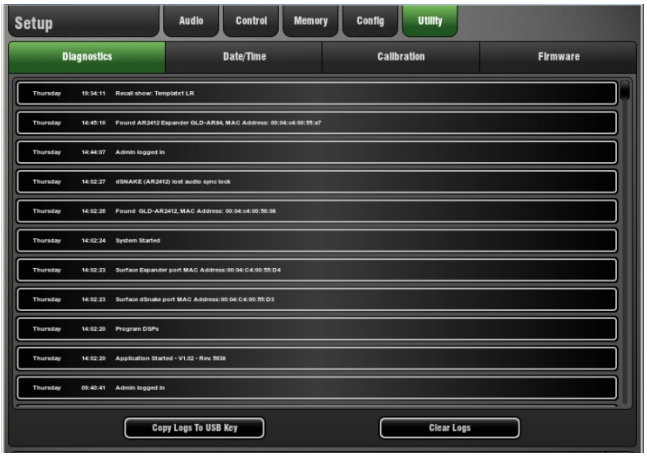
DCA:

- Name and Colour
- Assignments
- DCA/Mute Group Option

13. Setup Screen – Utility

13.1 Diagnostics page

View the system Event Log here.



This keeps a timed log of events such as system boot up or shut down, and when Scenes or other memories were recalled. It also logs any errors recognised by the system.

If you suspect a problem with the GLD you can copy the log to USB key and send it to Allen & Heath Technical Support for diagnostic purposes.

13.2 Date/Time Setup page

Use this screen to set the current date and time.

The time is displayed in the **Home** screen and is used in the Event Log.

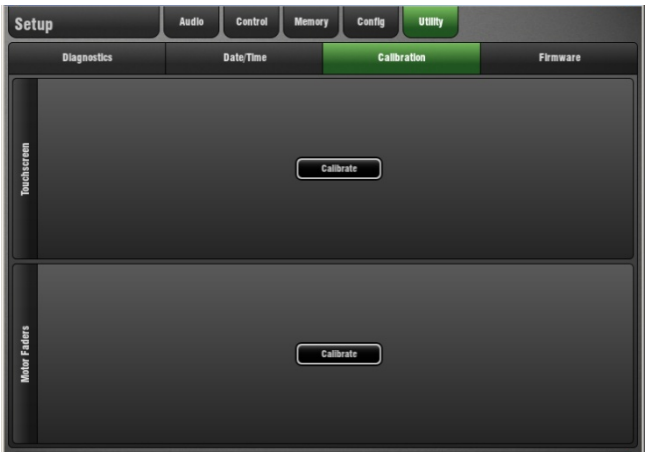
To change the Date – Scroll << or >> to the required month and touch a date box.

To change the Time – Touch the Hour, Minute or Second box to highlight it. Use the screen Rotary to set the value.

Press Apply to accept the changes or Cancel to return without changing the settings. Changing these settings will automatically restart the touch screen.

13.3 Calibration Setup page

The Calibration Setup page lets you recalibrate the accuracy of the touch screen or motor faders.



To calibrate the Touch Screen – Touch the Calibrate button. As accurately as you can touch the circle at the top left of the screen. Repeat for the other three corners.

To finish, touch the Press to Confirm button. This ensures that the calibration is correct. If it is not and you are unable to select the button the screen will time out and the previous calibration be restored.

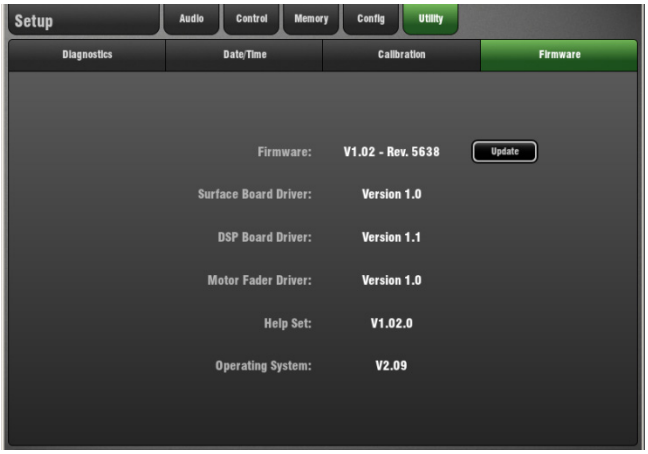
To calibrate the Motor Faders – Touch the Calibrate button. Follow the on-screen instructions and touch Next after each step. Set the faders to the positions instructed. Finally, touch Finish to complete the calibration.

Note The '+10dB' and '-Inf' positions are those marked on the panel, not the top or bottom of travel of the faders.

Note It may be necessary to re-calibrate the motor faders after you update the GLD system firmware or perform a full system reset.

13.4 Firmware Setup page

Use the Firmware Setup page to view or update the current firmware versions. Firmware is updated via a USB key.



To check the current Firmware versions – You can view the GLD Firmware version on the **Home** screen or use the Firmware Setup page to view further details on the system firmware and other drivers within the GLD.

Note Keep your GLD system updated with the latest version of firmware. Check the Allen & Heath web site for the latest version and information.

Note Updating GLD firmware is quick and easy using a USB key. However, we recommend that this is not done during or just before a show.

Note **Updating GLD firmware resets its parameters, preferences and Scenes.** If you want to keep your current settings save these as a Show first. Updating firmware does not affect User shows, User Profiles or their passwords stored in the GLD.

Note GLD Shows stored on systems running more recent versions of firmware are not compatible with and will not load on systems running earlier versions. However, earlier versions of Shows will load on GLD running later versions of firmware.

Features introduced on more recent firmware will not be recalled when an older Show is loaded. For example, the Scene Confirmation option was added to V1.1 and is stored in its Show files. Recalling a V1.0 Show will turn this option off if you had it selected on the updated console. If you want to set this in an older show then recall the show, turn the option on and then resave the show.

To update the Firmware – Refer to the GLD Firmware Update Instructions available from the Allen & Heath web site.

Touch the Update button. A popup appears warning that the GLD will be restarted. Touch Yes to continue.

The GLD will reboot to the 'Bootloader' screen. If valid firmware is found on the USB key then details of the current GLD firmware and the version found on the key will be displayed.

Touch the Update button and follow the instructions to continue.

Updating firmware will require a system restart.

Load a User or Template Show once the update is complete.

Recalibration after a firmware update - You may need to recalibrate the Touch Screen and Motor Faders after updating the firmware.

14. Resetting the GLD

There are different ways you can reset GLD settings:

- Use the surface Reset key to reset parameters
- Recall a Library to overwrite processing
- Recall a Scene to overwrite multiple parameters
- Recall A Show to overwrite all settings and Scenes
- Perform a Full System Reset using power up page
- Reset User Profiles and passwords using an internal jumper.

Save settings before resetting the system

Performing a reset overwrites GLD settings. If you wish to keep current settings then make sure you save them first.

'Reset' Scene

Factory default Template Shows include a 'Reset' Scene in position 1 (GLD-80) and 2 (GLD-112) to instantly reset parameters to the Template default without affecting the mix configuration, user preferences and other Scenes. These are backed up in Scenes 499 and 500. You can recall this Scene or any other you have set up as your own starting point. Protect parameters from Scene recall using its Scene Recall Filter and global Scene Safes.

Starting with a Template or User Show

If you want clear the GLD for a new event or after another user has finished you can load one of the several factory default Template Shows or a User Show. This will clear all Scenes and reset all settings to a familiar configuration and layout. To load a Show go to the **Setup** / **Memories** / **Show Manager** screen.

Loading a Template Show will:

- Restore a default configuration and layout
- Reset user preferences
- Zero the board current settings
- Reset the processing, routing and patching
- Clear all Scenes
- Clear all User Libraries

Note Loading a Template or User Show overwrites all Scenes and Libraries. Back these up first if you want to keep them.

To clear User Profiles and Passwords

This requires a hard reset by setting a jumper within the GLD. Disassembly is required.

Contact the Allen & Heath service agent or distributor in your territory for further information.

System Reset

This should only be done if you need to completely wipe the memory and restore the GLD to its factory default reset settings.

A Full System Reset will:

- Restore a reset configuration, layout and preferences
- Reset the processing, routing and patching
- Clear all Scene memories
- Clear all Libraries
- Clear all Shows stored in the GLD

A Full Reset does not clear User Profiles and passwords.

Note Before you start, make sure you have copied any User Shows you wish to keep to your USB key.

To fully reset the GLD first power it off without using the **Home** screen Power Down button. Power up and wait for the 'GLD not shut down correctly' screen to appear.

Touch the Advanced button and then touch Reset GLD.

Confirm that you wish to do this. Touch OK to reboot the system into its reset state.

Once the reset is complete we recommend you load a Template or User Show.